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# ENVIRONMENTAL ASSESSMENT BOARD



Ontario

## ONTARIO HYDRO DEMAND/SUPPLY PLAN HEARINGS

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VOLUME: 94

DATE: Tuesday, December 17, 1991

### BEFORE:

HON. MR. JUSTICE E. SAUNDERS	Chairman
DR. G. CONNELL	Member
MS. G. PATTERSON	MEMBER

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ENVIRONMENTAL ASSESSMENT BOARD  
ONTARIO HYDRO DEMAND/SUPPLY PLAN HEARING

IN THE MATTER OF the Environmental Assessment Act,  
R.S.O. 1980, c. 140, as amended, and Regulations  
thereunder;

AND IN THE MATTER OF an undertaking by Ontario Hydro  
consisting of a program in respect of activities  
associated with meeting future electricity  
requirements in Ontario.

Held on the 5th Floor, 2200  
Yonge Street, Toronto, Ontario,  
on Tuesday, the 17th day of December,  
1991, commencing at 10:00 a.m.

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VOLUME 94  
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B E F O R E :

THE HON. MR. JUSTICE E. SAUNDERS	Chairman
DR. G. CONNELL	Member
MS. G. PATTERSON	Member

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1 ---On resuming at 10:03 a.m.

2 THE REGISTRAR: Please come to order.

3 This hearing is now in session. Please be seated.

4 THE CHAIRMAN: Mr. Taylor?

5 MR. TAYLOR: Good morning, Mr. Chairman,  
6 Members of the Panel.

7 Mr. Chairman, this morning we would like  
8 to continue with our cross-examination working out of  
9 Exhibit 436, and this morning Mr. Watson will be  
10 continuing on his portion, and I will turn it over to  
11 Mr. Watson at this time.

12 MR. WATSON: Good morning, Mr. Chairman.

13 JUNE BASU ROY,  
14 KENNETH SNELSON,  
15 ERSKINE LEE FLOOK,  
16 THOMAS EASTON WIGLE,  
ALANNA MARY QUINN,  
BRIAN JOHN McCORMICK,  
REED CAMERON HARRIS; Resumed.

17 CROSS-EXAMINATION BY MR. H. WATSON (Cont'd):

18 Q. I start by referring everybody to tab  
19 17. This is page 4-6 of the environmental analysis,  
20 and I am looking at the first full paragraph on the  
21 third column where Ontario Hydro states:

22 Northern hydraulic developments have  
23 significant potential to adversely affect  
24 the community, special interests, and  
25 lifestyles. These effects may be

1 balanced by potential employment and  
2 economic development benefits. Special  
3 initiatives will ensure those adversely  
4 affected share in the benefits.

5 Is this still Ontario Hydro's position,  
6 Ms. Quinn?

7 MS. QUINN: A. Yes, it is.

8 Q. Would you agree that communities  
9 downstream from hydraulic development will be amongst  
10 those most adversely affected? If somebody is going to  
11 be adversely affected would you agree that it would be  
12 the downstream communities?

13 A. It could be. I would suspect there  
14 would be a number of factors to take into account  
15 before reaching that conclusion, but they could be.

16 Q. Okay. Will Ontario Hydro decide  
17 which communities are adversely affected?

18 A. No, that would be decided through the  
19 site-specific environmental assessment process.

20 Q. In terms of ensuring though that  
21 these communities, that they do have benefits, those  
22 that are adversely affected, will it be Ontario Hydro  
23 that will determine at the end of the day whether in  
24 fact they have been adversely affected?

25 A. No, the community itself will be part



1 of that process that identifies whether or not it will  
2 be adversely affected.

3 Q. Good. And likewise I can assume then  
4 for deciding who has benefited and who hasn't  
5 benefited, it will be a community-based decision?

6 A. Well, the community that is  
7 negatively affected will be the community that is asked  
8 to think through how to mitigate those impacts, and if  
9 there are offsetting activities or benefits that would  
10 be appropriate.

11 Q. Okay. Does Ontario Hydro plan to do  
12 baseline data studies of all potentially affected  
13 communities in advance of development?

14 A. I am going to assume you are speaking  
15 about work at the site-specific level.

16 Q. Well, in other words, in order to  
17 properly assess whether a community has been adversely  
18 affected and whether or not it has shared in the  
19 benefits, I am curious whether Ontario Hydro will have  
20 a base study in order to determine that?

21 A. Well, within the environmental  
22 assessment, analytical work is done, the level of  
23 analysis may vary per community or per factor.

24 Q. So a baseline study will be done for  
25 communities that would be most adversely affected?

1 A. Yes. I am just hesitant because I am  
2 not sure what you mean by baseline.

3 Q. I think you need to have a base in  
4 order to decide whether a community has been affected.

5 A. That's true, but various communities  
6 may have more extensive or less extensive base lines.  
7 That's really the only point I am making.

8 Q. The point I am trying to make is  
9 those communities that are most adversely affected I  
10 assume would be the ones with the best study or the  
11 most thorough study?

12 A. The communities most affected would  
13 certainly be identified to the extent it's possible to  
14 have information on them, that information will be  
15 pursued, and sometimes that information is available  
16 through published sources, sometimes you have to do  
17 special surveys, original work, and to some extent it  
18 depends on the co-operativeness of the people in the  
19 communities, the extent they want to participate in  
20 those studies. So it's difficult to say that they  
21 would necessarily have --

22 Q. But assuming that they would  
23 co-operate, it's Ontario Hydro's intention to do that  
24 kind of study?

25 A. I think that's fair. Your statement

1 is fair then with that qualifier.

2 Q. How will Ontario Hydro ensure that  
3 those adversely affected share in any benefits, what  
4 steps are they going to take?

5 A. Well, in my direct evidence I spoke  
6 about the steps associated with the assessment and  
7 evaluation of impacts to determine their significance  
8 and duration and magnitude and then moved on to a  
9 discussion about impact management which includes eight  
10 different activities. And it's through the process of  
11 impact management that you determine how to basically  
12 reduce the negative and enhance the positive.

13 Q. So does Ontario Hydro have plans in  
14 place now to deal with those sorts of things, or is  
15 this something you are going to react to when there is  
16 a problem?

17 A. No, you do that through the  
18 preparation of the site-specific environmental  
19 assessment.

20 Q. So at the planning stage you don't  
21 have that kind of planning -- that's not part of your  
22 planning at the planning stage, generally, I am not  
23 talking about a specific site, but generally?

24 A. If you mean at the planning stage,  
25 this particular planning stage that we are in now, we

1 have a corporate policy on mitigation and compensation  
2 and we have a track record in impact management and I  
3 have basically outlined various kinds of activities in  
4 impact management. And we have also said that when we  
5 get into site-specific work, the determination of the  
6 impact management approaches that are best suited to  
7 that community will be identified in conjunction with  
8 the community, so there may be some new features that  
9 are developed that meet the particular circumstances of  
10 a community.

11 Q. Let me give you an example, maybe  
12 that will help get at what I am thinking of. If you  
13 turn to tab 18, this is Interrogatory 6.26.147, in that  
14 interrogatory when asked what special attention native  
15 people would receive. Ontario Hydro replied that it  
16 was undertaking initiatives to increase Aboriginal  
17 participation in its workforce and that these  
18 initiatives would include, and then there was a list  
19 provided, and I will just read that list in. Specific  
20 targets and programs for hiring Aboriginal people;  
21 cross-cultural training for management and supervisory  
22 staff; scholarship programs for Aboriginal students at  
23 Lakehead University; allocation of 50 per cent of  
24 summer student positions to employment equity target  
25 groups; Aboriginal people; women; visible minorities



1 and persons with disabilities.

2 Now, this may not go far enough, but I  
3 would commend Ontario Hydro for these programs and  
4 plans.

5 My question would be: Will other  
6 northerners, including non-Aboriginal and Aboriginal  
7 people without treaty status, receive any special  
8 initiatives with respect to employment training from  
9 Ontario Hydro, as an example of what I am trying to get  
10 at?

11 A. Yes. I can speak specifically about  
12 the project-specific stage. There is an interest to  
13 enable local employment which would include Aboriginal  
14 and non-Aboriginal people, so that would include status  
15 and non-status.

16 Q. Is there a special initiative though?

17 A. Well, I think the document that was  
18 prepared, that's referred to in the first program for  
19 the Moose River Basin, employment and economic  
20 development opportunities and barriers, sets out a  
21 framework for activities within the basin, and then  
22 depending on the specifics that develop, the  
23 communities that are a part of the study area, the  
24 nature of the skills in that area, the extent to which  
25 training is appropriate or required, the unions

1 involved, and so on, there would be then specifics  
2 identified, but that would be at the site-specific  
3 stage.

4 Q. So at this stage, for instance, you  
5 wouldn't have a group of initiatives like that cited in  
6 the interrogatory I have referred to; is that fair to  
7 say?

8 A. At this stage in terms of broad  
9 planning?

10 Q. Right.

11 A. No, no more than what the  
12 interrogatory responds to.

13 Q. I would like to use as an example of  
14 this, and I think it is important to do this, to refer  
15 the Board and everyone to Exhibit 394 which is the  
16 Mattagami River Extensions EA document. If you could  
17 look at tab 19 under the heading or section heading  
18 5.21, Study Area and Methods, you see a list there  
19 which includes Kapuskasing, Smooth Rock Falls, Val Rita  
20 Harty, Moonbeam, Abitibi Canyon/Fraserdale,  
21 Fauquier-Strickland, Opasatika, Kitigan and Smoky  
22 Falls.

23 These are all defined as local study  
24 communities; correct?

25 A. That's correct.

1 Q. Following that list, looking again at  
2 the same section, the same tab, it says:

3 By virtue of their proximity to the  
4 proposed project, the local study area  
5 settlements represents the (non-native)  
6 socio-economic environment that will be  
7 most directly affected by project  
8 construction and operation.

9 In the following paragraph there is a  
10 list of communities which are included in what is  
11 called the regional study area which is delineated by  
12 the boundaries of the district of Cochrane; correct?

13 A. Yes, that's correct.

14 Q. And those communities included are  
15 Timmins, Iroquois Falls, Hearst, Cochrane, Black  
16 River-Matheson, Moosonee/Moose Factory, Mattice-Val  
17 Cote and Hallebourg.

18 I would like to refer the Board to the  
19 beginning of that last paragraph on page 5-39 where it  
20 stated that:

21 The regional study area casts a broad  
22 geographic framework around those  
23 proposed projects and serves the purpose  
24 of delimiting those community that may be  
25 recipients of secondary and indirect



1                                socio-economic effects.

2        [10:10 a.m.]

3                                Therefore, it is clear that with respect  
4        to the Mattagami extensions project, for example, that  
5        Moosonee is to receive minimal if any economic benefits  
6        from that project despite the fact that Moosonee is  
7        clearly amongst those most adversely affected by it;  
8        isn't that correct?

9                                A. No, I don't believe the conclusion of  
10       the study was that Moosonee would be among those most  
11       adversely affected by the Mattagami Complex.

12                               I think the study found that there would  
13       be some effects, but they would not be among the most  
14       directly affected, and, therefore, you find reference  
15       within the paragraph at the bottom of page 5-39 that  
16       they may be recipients of secondary or indirect  
17       effects.

18                               And I think within the study that there  
19       is some reference made to the fact that there might be  
20       some employment provided to people from Moosonee, but  
21       because of its distance it is not likely to have the  
22       direct impacts that other communities would have. So  
23       it's not likely to have the direct benefits either.

24                               Q. So you are agreeing that it won't  
25       have the direct benefits?

1                   A. I am agreeing that both the negative  
2 and the positive are reduced for that community because  
3 of its distance from the complex.

4                   Q. You are making the assumption that in  
5 fact Moosonee is not one of the more adversely affected  
6 communities?

7                   A. Throughout the process of the study  
8 that was the indication.

9                   Q. Wouldn't you agree that Moosonee is  
10 simply being lumped into a second category with  
11 communities that clearly won't be adversely affected by  
12 this development?

13                   A. We have defined it geographically as  
14 fitting into a group that we have called the Regional  
15 Study Area, but within that there could be distinctions  
16 made between communities that could be more affected  
17 than others.

18                   Q. Well, would you agree with my  
19 question, that Moosonee is a more adversely affected  
20 community than those listed here?

21                   A. That's really not what the study  
22 found. I presume --

23                   Q. Can I take it beyond just the study  
24 then, and would you not agree with me in general that  
25 Moosonee will be more adversely affected by hydraulic

1 development in the Moose River Basin than Cochrane or  
2 Hearst?

3 A. I am speaking only about the  
4 Mattagami Environmental Assessment, that's the document  
5 you have referred me to, and I am speaking specifically  
6 about the results of that study.

7 I haven't given you an answer to the  
8 question you have just posed, which is about  
9 development within the Basin. I haven't an answer to  
10 that. I don't know. We haven't been able to do the  
11 plan assessment. We haven't proceeded to do the  
12 site-specific work beyond the Mattagami Complex.

13 Q. So you are saying that it has been  
14 determined by this study that Moosonee is not one of  
15 the more adversely affected communities?

16 A. That's correct.

17 Q. Can I refer the Board to tab 20?  
18 This is page 6 of the hydraulic plan, and I am looking  
19 at the third full sentence.

20 THE CHAIRMAN: Exhibit 28? Exhibit 28,  
21 is it?

22 MR. TAYLOR: Tab 20?

23 MR. H. WATSON: Tab 20.

24 THE CHAIRMAN: Exhibit 28?

25 MR. H. WATSON: Yes, it is.

1 THE CHAIRMAN: Thank you.

2 MR. H. WATSON: Q. The third full  
3 sentence, I believe, states:

4 As a responsible user of a river  
5 Ontario Hydro must study the effects of  
6 hydraulic development carefully to ensure  
7 that it will on balance provide net  
8 benefits for the local people and the  
9 people of Ontario.

10 Does this statement still accurately  
11 reflect Hydro's position?

12 MS. QUINN: A. Yes. In fact, I think  
13 just earlier you pointed out the difference between the  
14 local and the regional study area.

15 Q. Yes, I did. Thank you.

16 A. This makes specific reference to  
17 local.

18 Q. I realize that. Thank you. Would  
19 you agree that the Mattagami River extension's EA  
20 document does not identify any special initiatives to  
21 ensure that those communities downstream share in the  
22 benefits of development?

23 A. If you can give me just a second, I  
24 will check.

25 THE CHAIRMAN: We are looking now at the

1 Mattagami EA?

2 MS. QUINN: Yes. I am actually hesitant  
3 to answer this question because I find it very  
4 site-specific.

5 THE CHAIRMAN: Well, I wouldn't entirely  
6 disagree with you on that, but it is perhaps being  
7 given as illustrative of the general approach of Hydro  
8 to these kinds of matters.

9 But is the Mattagami EA an exhibit to  
10 this hearing?

11 MR. H. WATSON: I believe it's Exhibit  
12 394.

13 THE CHAIRMAN: Is it?

14 MS. HARVIE: Yes, that's correct, Mr.  
15 Chairman.

16 THE CHAIRMAN: All right.

17 MS. HARVIE: I should perhaps say that in  
18 light of my lack of success to date in arguing  
19 site-specificity I haven't risen to my feet on every  
20 occasion when a site-specific issue has arisen, but  
21 perhaps my objections will stand throughout the course  
22 of the cross-examination.

23 THE CHAIRMAN: I have been somewhat  
24 tolerant about site-specific questions until they go  
25 too far, and then I try and stop them.



1 But perhaps if Ms. Quinn can just answer  
2 this question I will let the question stand.

3 MS. QUINN: The work force within the  
4 study area and the communities most directly affected  
5 for the Mattagami Complex in terms of the social impact  
6 assessment --

7 MR. H. WATSON: Q. The local or the  
8 regional study area?

9 MS. QUINN: A. Just in general the study  
10 area, which would include both local and regional.

11 Q. Okay.

12 A. The results of the social impact  
13 assessment and the consultation activities suggest that  
14 it is the communities south of the complex, not north  
15 of the complex that are most directly affected, and so,  
16 within the social impact assessment - and it is Volume  
17 1 that I am looking at, towards the back; I believe  
18 it's Table 8-2 - there is a Summary of Impacts for the  
19 District of Cochrane for construction, and there is  
20 another one, 8-3, that has to do with operations.

21 Because there are very few negative  
22 impacts identified and there are some positives there  
23 is not much impact management that's required.

24 I can direct you specifically to Volume 2  
25 of the same social impact assessment, and there is a

1 discussion there of the communities and their make-up,  
2 and it helps explain why there is less impact, because  
3 there is less involvement people likely from Moosonee.

4 Q. I think I agree with that, actually.

5 I guess my concern is that the adverse  
6 effects that I am thinking of are not only social and  
7 economic impact, but environmental impact, and I think  
8 that seems to be ignored here.

9 The concept, as I understand it, is that  
10 Hydro will benefit those most adversely affected. I  
11 think I have had agreement that Moosonee will be  
12 amongst those most affected, and one of the ways --

13 A. No, you haven't, actually. I have  
14 disagreed with you on that point for the Mattagami EA.

15 Q. I will let the transcript stand on  
16 its own.

17 But I guess my point is that -- and I  
18 perhaps shouldn't make it again, but there is an  
19 environmental impact on Moosonee, and my point is that  
20 it will be greater than any other of the communities  
21 listed in that regional study area, and, therefore,  
22 what I am suggesting is that it has effectively been  
23 lumped in with a group of communities that will not be  
24 impacted to the same degree.

25 MR. MCCORMICK: A. I think we have to



1 strongly disagree, and I think a close reading of that  
2 environmental assessment will demonstrate just the  
3 opposite. Moosonee and Moose Factory are not greatly  
4 affected by the Mattagami extensions. It's very  
5 clearly delineated, and all the reasons, including  
6 environmental effects, are in that environmental  
7 assessment document. We can't point to specific  
8 sections here without spending hours going through the  
9 whole document. It is a very site-specific matter.

10 Q. Perhaps I will leave it to our direct  
11 evidence to make our point with respect to that, but I  
12 might just want to ask you one more question with  
13 relation to this, and that is: Would you agree that  
14 Moosonee will not benefit economically from this  
15 development in any way beyond that of which any other  
16 community would benefit?

17 MS. QUINN: A. It will depend to some  
18 extent on the particulars of that community.

19 It is true within the District of  
20 Cochrane there is less negative effect in the regional  
21 study area and less benefit as a result of the project,  
22 but it will depend on the people who are interested in  
23 work and their background, the extent to which they  
24 might take up opportunities to do with training or  
25 becoming union members. It might have to do with the

1 extent to which the business community is interested in  
2 participating in the tendering process, the extent to  
3 which they might work with the economic development  
4 officer that's going to be identified or the project  
5 liaison officer to provide information on the  
6 purchasing that will done by the project.

7 So there is some initiative required on  
8 the part of individuals and businesses in order to  
9 bring some benefit to that community, and that's I  
10 think stated quite clearly within the document.

11 But we do try to go part way and to make  
12 information available to participating various programs  
13 to enable people to benefit.

14 Q. I asked you a few moments ago if  
15 there were any special initiatives.

16 A. And my answer really is: It will  
17 depend in part on the extent to which individuals and  
18 groups within Moosonee rather than other communities  
19 seek out some of the information that will enable them  
20 to benefit.

21 Q. So there are no special initiatives?

22 [10:25 a.m.]

23 You are saying that they have as much --  
24 they have the same ability as any other community to  
25 get involved and take advantage of any economic

1 opportunities that are there, correct?

2 MR. McCORMICK: A. I think it is our  
3 judgment that no special initiatives were warranted at  
4 this point. It doesn't preclude future opportunities,  
5 but that was the judgment made during the environmental  
6 assessment process.

7 Q. You did say that those adversely  
8 affected would have special initiatives to assist them,  
9 correct?

10 MS. QUINN: A. Yes. I believe in your  
11 tab 20 that there is a reference in the middle of that  
12 paragraph to on balance and it is the notion of  
13 providing balance. So where there is negative effect  
14 there should be some benefit, and it's a question of  
15 proportion.

16 Q. Well, in fact it says on balance  
17 provide net benefits. But anyway, I will leave this.

18 A. That's true, but I guess what we are  
19 saying is that as a public corporation we are not able  
20 to provide benefit to communities that have, for  
21 example, no negative affect. So if there is only some  
22 negative effect, you are going to have something in  
23 proportion.

24 Q. We haven't yet established whether  
25 there is a net negative effect, if that's your view.

1 A. No, but --

2 Q. We will try to do that in our direct  
3 evidence.

4 A. I am just speaking to the general  
5 principle that we would observe.

6 Q. Thank you.

7 Moving on to another area, I would like  
8 to take a brief look at the criteria used in selecting  
9 basins or sites. Now, we are not interested in  
10 talking --

11 MS. HARVIE: Mr. Chairman, we have not  
12 selected basins or sites, as I have said on numerous  
13 occasions before.

14 THE CHAIRMAN: That's right.

15 MR. H. WATSON: It's truly not the point  
16 that I am trying to make.

17 THE CHAIRMAN: What point are you trying  
18 to make?

19 MR. H. WATSON: I am interested in  
20 knowing the process or the plan that they have in  
21 place. I think that is a reasonable part of planning.

22 THE CHAIRMAN: No, there is nothing in  
23 this particular matter before the Board about selection  
24 of sites. All there is is the ascertainment of  
25 attainable potential. That's what we are talking



1 about, but selection of sites within that is not part  
2 of what is before this Board.

3 MR. H. WATSON: Is it not within the  
4 jurisdiction of the Board, though, to determine terms  
5 and conditions as to how that development will proceed?

6 THE CHAIRMAN: In a generic sense only.

7 MR. H. WATSON: That is actually what I  
8 can thinking of, I think.

9 THE CHAIRMAN: All right, ask your  
10 questions, but the question about technique about  
11 orderly developments of sites is not part of this  
12 hearing.

13 MR. H. WATSON: Okay.

14 Q. On tab 21, Interrogatory 6.33.4C we  
15 asked the question, and again the question is not the  
16 important issue here, so I will probably be criticized  
17 for this, but it's the answer I am interested in, it  
18 says:

19 What criteria were used in the  
20 selection of the sites identified in the  
21 DSP and their respective installed  
22 capacities and the sequence of  
23 development, and what weights were  
24 attached to these criteria in the  
25 formulation of the hydraulic plan?

1                   The answer we received is, second  
2       sentence:

3                   Consideration of the environmental,  
4                   technical, and economic constraints and  
5                   factors discussed in 3.0 and 4.0 of the  
6                   hydraulic plan, which is Exhibit 28, lead  
7                   to the judgment that some potential is  
8                   impractical for future development. No  
9                   formal weighting system is used in  
10                  connection with the identification of the  
11                  practical potential.

12                 As I say, we are not interested in the  
13       specific sites, but we are curious about how that  
14       process will work.

15                 If I can have everybody look at tab 22,  
16       just by way of refreshing everyone's mind as to what  
17       3.0 and 4.0 addressed, I think you would agree that in  
18       3.0, which is at page 7 of the hydraulic plan,  
19       essentially there we have listed out the original  
20       exclusionary criteria which I know have been added to  
21       since, that you used to arrive at the attainable  
22       potential; correct? Is that essentially what those  
23       are?

24                 MS. BASU ROY: A. The bottom line here,  
25       we did not arrive at an attainable potential. I

1 believe we identified it as arriving at a practical  
2 potential.

3 Q. Would you agree that these - I don't  
4 really want to pursue this - but would you agree that  
5 these are the criteria, or the original criteria from  
6 which you eventually developed your exclusionary  
7 criteria that you presented in your direct evidence?

8 A. There is some similarity but it's not  
9 a direct relationship.

10 Q. Okay. We are then told in this  
11 answer to look at 4.0 of the hydraulic plan which is at  
12 page 10. We are directed here to find the factors or  
13 criteria that were used, or will be used to determine  
14 which site within the potential is to be developed;  
15 correct?

16 A. Within the practical potential. So  
17 at this point we had identified a practical potential  
18 and we are indicating that we were not planning on  
19 developing all of that practical potential, and we  
20 listed some reasons that were considered for not  
21 developing or not including all of the practical  
22 potential in the hydraulic plan as we saw it at that  
23 point in time.

24 Q. So you would agree that this isn't  
25 meant to be an exhaustive or thorough list of the --



1                   A. The sentence there just prior to the  
2 list indicates that it is not an exhaustive list.

3                   Q. Has Hydro developed a comprehensive  
4 and fixed set of criteria that it has and will use when  
5 it comes around to doing this site selection? Has it  
6 got that list developed as part of its planning?

7                   THE CHAIRMAN: Even if it has, I am not  
8 sure it's relevant to this hearing.

9                   MR. H. WATSON: Well, I suppose why we  
10 think it's relevant is we would like some assurance  
11 before they go into this that they have already  
12 considered how that process will work, not that we want  
13 to explore how they got to the Mattagami sites or they  
14 got to Little Jackfish, but just to know for the  
15 comfort of our client.

16                   THE CHAIRMAN: The Mattagami  
17 redevelopment is no more now than part of an attainable  
18 potential. That's all it is at the moment, that's the  
19 Mattagami redevelopment sites.

20                   MR. H. WATSON: Well, perhaps I could  
21 just end with one question on this area then.

22                   Q. You have stated that you had no  
23 formal weighting system with respect to these criteria  
24 or factors used, has that changed?

25                   MS. HARVIE: Surely, Mr. Chairman, that's

1 just another version of the very same question asked a  
2 moment ago. I would submit, as you pointed out, that  
3 the matter is simply not relevant.

4 THE CHAIRMAN: Sorry, two people were  
5 talking to me at the same time.

6 MS. PATTERSON: Go ahead.

7 MS. HARVIE: I was simply pointing out  
8 that that was a version of the same question that was  
9 asked a moment ago, that the criteria that went into  
10 the selection of the hydraulic plan, as you pointed out  
11 a moment ago, that matter is no longer relevant to the  
12 hearing, to this matter that's before us now.

13 MR. H. WATSON: Mr. Chairman, all I was  
14 trying to get at is we believe this goes to process and  
15 planning. I don't want to know how they actually  
16 arrived at Little Jackfish, but I want to know the  
17 process that they would go to arrive at any site.  
18 That's what I am curious about.

19 THE CHAIRMAN: After this plan has  
20 been --

21 MR. H. WATSON: I guess what I am saying  
22 is this should be part of this plan. They should know  
23 before they go out beyond this hearing, they have  
24 should have an idea of how they are going to be  
25 developing these things. They have already submitted

1 individual EAs for Mattagami and Niagara and Little  
2 Jackfish, so surely that process already exists.

3 THE CHAIRMAN: If the get an approval of  
4 the attainable potential from this hearing, then they  
5 will have to sit down and decide what order and which  
6 ones they are going to develop and when they were going  
7 to develop it, as I understand it, and I don't know  
8 whether that's part of what we have to do.

9 MS. PATTERSON: It is your argument that  
10 the criteria for how those are developed and when they  
11 are developed should be part this plan?

12 MR. H. WATSON: Yes.

13 MS. PATTERSON: That's how I understand  
14 your argument.

15 THE CHAIRMAN: But that would mean that  
16 they should be an exclusionary item in the attainable  
17 potential; is that what you mean?

18 MR. H. WATSON: No. I think stepping  
19 beyond when they arrive at their attainable potential,  
20 I feel that in order to be granted that right to  
21 develop that attainable potential, this Board and the  
22 people affected should have the knowledge of where they  
23 are going, what process they are going to be using.  
24 And what I am suggesting is that it is within the  
25 jurisdiction of the Board to consider imposing terms

1 and conditions on how that development proceeds.

2 ---Off the record discussion.

3 THE CHAIRMAN: All right, Mr. Watson, we  
4 will let you ask the question only to the extent of the  
5 technique but we don't want any site-specific questions  
6 asked about it, just the technique that they plan to  
7 use.

8 MS. HARVIE: Mr. Chairman, if I may, this  
9 is the point that I made the other day about prejudice  
10 to Ontario Hydro in light of the fact that your ruling  
11 was that the rationale for the selection of sites was  
12 no longer appropriately dealt with in this hearing. We  
13 felt that it was inappropriate that we pursue the  
14 process and rationale for the selection of sites here  
15 and elsewhere in another process. That really is what  
16 is prejudicial to Ontario Hydro in the sense that these  
17 witnesses would be cross-examined on that in this  
18 hearing and then there may well be another process as  
19 well where the very same matters are dealt with again.

20 THE CHAIRMAN: I am not going to permit  
21 any site-specific questions. All I want is a general  
22 outline about the technique that is used and after  
23 that, that will be the end of that.

24 MS. HARVIE: With respect, I think these  
25 witnesses can provide some evidence about technique



1       that was used in the formulation of the hydraulic plan,  
2       but with respect to any future process I don't know  
3       that they can give any evidence about that, because  
4       it's my understanding that process hasn't been worked  
5       out yet.

6                   THE CHAIRMAN: All right.

7                   MR. H. WATSON: Q. Am I correct then in  
8       assuming from what your counsel said that this process  
9       hasn't been yet worked out?

10                  MR. SNELSON: A. Yes. I think that the  
11       change in the scope of this hydraulic panel only  
12       occurred a very short period of time ago, and the  
13       implications of that for how the proceedings that would  
14       follow this for site-specific environmental assessments  
15       which now obviously have to include site selection  
16       matters, that hasn't been carried through as yet, and  
17       so I don't think that we have that evidence to give.

18                  Q. You don't have the process in place  
19       fixed yet, is that what you are saying?

20                  A. Yes.

21                  Q. One last question on this area.  
22       Notwithstanding that you don't have that process in  
23       place, you have filed specific EAs since then.

24                  THE CHAIRMAN: Not since the decision was  
25       made, I don't believe.

1 MR. SNELSON: That is my understanding.

2 THE CHAIRMAN: There were EAs filed, but  
3 they are somewhat outstanding EAs.

4 MR. H. WATSON: I suppose what I am  
5 concerned about is that if specific site EAs have been  
6 filed, that there must have been a process that was  
7 used, and I assumed that that process will be available  
8 for review as part of the planning process. But if it  
9 doesn't exist, it doesn't exist.

10 MR. SNELSON: I would presume, and I say  
11 these matters haven't yet been settled, but I would  
12 presume that there would have to be some additional  
13 information in one way or another associated with the  
14 site-specific environmental assessments to fill that  
15 gap of what is not being looked at here and now must be  
16 looked at in those processes.

17 MR. H. WATSON: I think you have answered  
18 my question. I think I know what your position is and  
19 where you are at it.

20 Q. I have one last question before I  
21 turn this over to Mr. Taylor.

22 Can I refer everyone to tab 23. This is  
23 Interrogatory 6.33.18, where we asked:

24 Have the relative environmental  
25 impacts from the various components of

1 the hydraulic plan been evaluated, i.e.,  
2 Niagara compared to northern rivers, in  
3 terms of expected power output?

4 Ontario Hydro stated:

5 No. The nature, scope and extent of  
6 environmental affects of hydraulic  
7 development are site-specific.  
8 Environmental affects are therefore  
9 determined with respect to specific sites  
10 and are not comparable across sites.

11 Environmental effects of individual  
12 developments in the hydraulic plan will  
13 be full assessed in site-specific  
14 environmental assessments.

15 My question is simply: Is this still  
16 Ontario Hydro's position, Mr. McCormick?

17 [10:40 a.m.]

18 MR. MCCORMICK: A. It is correct to the  
19 extent that the possible amendments that Mr. Snelson  
20 was talking to might factor this into the analysis.

21 We are not aware to what extent any  
22 additions to the environmental assessment that would  
23 have been submitted might deal with comparative affects  
24 on a broader level. I think that the statement,  
25 though, that they're not directly comparable is true



1 and would be extremely difficult, if not impossible, to  
2 do because of the nature of the development, the  
3 different capacities to try to reduce an effect down on  
4 a per megawatt basis is nearly impossible.

5 MR. H. WATSON: Okay. Thank you very  
6 much. Thank you, Mr. Chairman.

7 MR. TAYLOR: Mr. Chairman, I would like  
8 to move to the area of costing.

9 FURTHER CROSS-EXAMINATION BY MR. TAYLOR:

10 Q. And am I correct when I state that  
11 Hydro's decision to provide for a premium preference in  
12 the calculation of the cost/benefit ratios with respect  
13 to the hydraulic development was based on its  
14 perception that hydraulic development was a preferred  
15 option of the public?

16 MR. SNELSON: A. It was based on a  
17 number of factors. Public opinion, public preference  
18 and preference of customers was one factor, and that  
19 was confirmed by recommendations of the Select  
20 Committee. Other factors in that decision, which I  
21 think are also quite important, are the renewable  
22 nature and the indigenous nature of the resource.

23 Q. Would you agree with me, Mr. Snelson,  
24 that in fact there is no accounting principle upon  
25 which this preference was based?

1 A. I think that was discussed in  
2 Panel 3.

3 Q. Would you agree with me?

4 A. It was not a specific accounting  
5 principle that I know.

6 Q. Thank you. And in the consultation  
7 process did Hydro ask the public whether it would  
8 support the premium preference that was placed on the  
9 cost/benefit ratio?

10 A. I don't believe that question was  
11 specifically asked.

12 Q. Thank you. And is it Ontario Hydro's  
13 position that persons in communities that live  
14 downstream from a proposed hydraulic development would  
15 support the concept of a premium preference for  
16 hydraulic development?

17 A. I think you explored yesterday the  
18 question as to whether the broader expressions of  
19 public opinion included the opinion of specific people  
20 who live downstream of hydroelectric developments.

21 So the difference of opinion, I think, to  
22 the degree that it exists was discussed yesterday. We  
23 hadn't got a specific expression of opinion on  
24 preference from customers in general and we certainly  
25 didn't have it from people downstream.

1 Q. Do I take it the answer to that then  
2 is, you don't know?

3 A. Can you repeat your question? I will  
4 try and be as helpful as I can.

5 Q. My question was: Is it Ontario  
6 Hydro's position that persons and communities living  
7 downstream from a proposed hydraulic development would  
8 support the concept of a premium preference for  
9 hydraulic development?

10 A. And the specific answer is, I don't  
11 know.

12 Q. Now, isn't it true that one of  
13 Ontario Hydro's justifications for including hydraulic  
14 development in their plans is its relative cost as  
15 compared with other options?

16 A. Well, cost evaluations are a factor  
17 in our decisions, and to that extent, yes.

18 Q. Thank you. And am I correct in  
19 saying that Hydro has factored into the cost of  
20 mitigation, monitoring, and compensation in its  
21 cost/benefit ratios?

22 A. Yes, I believe that was Mr. Flook's  
23 evidence.

24 Q. Thank you. And turning to  
25 Interrogatory 6.26.6, which is found at tab No. 24,

1 would you agree with me that Ontario Hydro stated in  
2 its suggested response:

3 All existing Ontario hydroelectric  
4 facilities predate environmental  
5 assessment requirements by many years.  
6 No post-project environmental effects  
7 studies were undertaken following  
8 construction or during operation of these  
9 facilities. Hence, none are available.

10 Do you agree with that statement?

11 MR. McCORMICK: A. That is true.

12 Q. Thank you. And would you agree with  
13 me that if hydroelectric facilities had been through  
14 the EA process and if Ontario Hydro had conducted  
15 post-construction and environmental effects studies  
16 that your costing would therefore be much more  
17 accurate?

18 MR. SNELSON: A. Can you be more  
19 specific as to whether you are talking about existing  
20 stations or new stations?

21 This sentence, I believe where you  
22 started this interrogatory response, is about existing  
23 stations.

24 Q. It indicates --

25 THE CHAIRMAN: I am a little puzzled by



1 the question because the question relates to  
2 environmental effects and whether there had been any  
3 post-construction. And then the question now is about  
4 costing, and I don't know whether the part you read was  
5 responsive to a costing question.

6 MR. TAYLOR: Mr. Chairman, the issue that  
7 I am simply trying to get at is the fact that what had  
8 been done by Ontario Hydro predates and wasn't subject  
9 to the Environmental Assessment Act and there were no  
10 follow-up studies that were done.

11 Notwithstanding that, the information has  
12 shown that Ontario Hydro has attempted to factor in  
13 mitigation, monitoring, compensation measures.

14 THE CHAIRMAN: I thought you were talking  
15 about cost of hydraulic projects at this point, but  
16 perhaps I misunderstood you.

17 MR. TAYLOR: Mr. Chairman, I don't mean  
18 to miscommunicate with the Board, but all those costs  
19 get factored into the costing.

20 Q. My simple question is: Had Ontario  
21 Hydro had the experience of having hydraulic in the  
22 environmental assessment process and conducted  
23 post-construction studies that their information would  
24 be more accurate? That's the simple question.

25 MR. FLOOK: A. And the answers I gave in



1 my direct evidence is, yes, estimates are based upon  
2 current hydroelectric projects elsewhere in Canada,  
3 which also includes these similar items, and the  
4 information is gotten from that. And if you had done  
5 it a couple decades ago it would not necessarily have  
6 made the current estimates any more accurate.

7 Q. Let me turn to tab No. 25. Tab 25 is  
8 page 3 from the hydraulic plan, and am I correct that  
9 there is a reference at the bottom of the page there  
10 that talks about capital and operating costs, and it  
11 says in the middle with regard to hydraulic projects:

12 However, they have a long life  
13 expectancy - new plants are assumed to  
14 have a 90-year life based on experience.

15 Is that correct?

16 A. That's what the statement says in the  
17 hydraulic plan and that was true at the time that was  
18 written.

19 As I gave to you in my direct evidence,  
20 Ontario Hydro now considers that a hydraulic station  
21 for economic analysis purposes uses the 90-year life,  
22 but in actual fact based upon our understanding that  
23 plants can be rehabilitated and continuously used that  
24 in actual fact they have an indefinite life.

25 Q. I understand the indefinite life

1 aspect, but am I correct that Hydro bases its costing  
2 calculations on a 90-year life expectancy?

3 A. They base it on economic analysis  
4 based upon a 90-year life.

5 Q. So in 1992 we are looking at a  
6 costing horizon that's somewhere in the range of years  
7 between 2080 to say 2110 based on a construction  
8 period; is that correct?

9 A. That is correct.

10 Q. And if we turn the page at tab 25 to  
11 page 4 from the hydraulic plan at the top of the page  
12 you will acknowledge that it states there that:

13 Since hydraulic plants are  
14 capital-intensive, bringing them into  
15 service generally has a higher impact on  
16 electricity rates during the early years  
17 than fossil plants of a similar size.

18 Is that correct?

19 MR. SNELSON: A. That is usually  
20 correct.

21 Q. And does it further state at the  
22 conclusion of that first paragraph:

23 During later years, on the other  
24 hand, hydraulic plants become a  
25 moderating influence on rates because of

1                   their low operating cost and longevity?

2                   A. Yes.

3                   Q. I think the answer to this is that  
4           you still base your long-term planning in terms of this  
5           assumption that is reflected on page 4 of the hydraulic  
6           plan; is that correct?

7                   A. Which assumption on page 4 were you  
8           referring to?

9                   Q. The two parts, in terms of the  
10          capital-intensive and the effect on rates early and the  
11          moderating influence later.

12                  A. Our economic evaluations are done on  
13          a present value basis, as we discussed in Panel 3.

14                  The rate impact is a secondary type of  
15          consideration. Generally speaking, the selection of  
16          the project with the lowest present value of long-term  
17          costs will ensure the lowest impact on rates over the  
18          life of the project, recognizing that they may be  
19          different in some years to other years.

20                  Q. Well, if the past 90 years are any  
21          indication, isn't it likely that there will be  
22          technological change in the next 90 years that will  
23          impact on how energy is generated?

24                  A. Obviously technological change in the  
25          ways in which energy is generated will likely occur.

1 We think it is very unlikely that that would cause  
2 energy to become so inexpensive that it would not be  
3 worthwhile operating hydraulic plants that had been  
4 already built.

5 Q. But wouldn't you agree with me that  
6 if Ontario Hydro is relying on the later years in the  
7 life of a hydraulic facility to make a project  
8 financially viable that such a 90-year cost analysis is  
9 likely to be overtaken by time and be invalid?

10 A. No, that has not been our experience.

11 Q. You don't believe it would be more  
12 realistic to do your cost analysis over a shorter  
13 period of time?

14 A. No. The fact is that hydraulic  
15 plants once built can operate for very long periods of  
16 time at relatively low cost in terms of operation.

17 I think it is reasonable to consider the  
18 general trend in value of energy in those types of  
19 evaluations, and looking from where we are today into  
20 the future I think we would tend to suggest that it is  
21 more likely that energy will be increasingly valuable  
22 in the future rather than reducing the value in the  
23 future.

24 Q. Let me turn to tab 26. Tab 26 is the  
25 newspaper report of the Toronto Star from December



1 13th, 1991, and it is in an article that is shown there  
2 at tab 26, but midway through this portion of the  
3 article there is a quote that's attributed to Mr.  
4 Eliesen, and the quote indicates that:

5 The changeability of the future  
6 suggests to us that megaprojects are  
7 becoming less of a credible answer. They  
8 are a huge capital drain and carry a  
9 great deal of financial risk.

10 Am I correct that these comments  
11 accurately indicate Ontario Hydro's policy now?

12 A. Well, this is a newspaper report of a  
13 speech that the chair of Ontario Hydro gave. These  
14 quotes, I believe, reflect statements that he did make.  
15 I don't believe the article in total is a summary of  
16 all the things he said. It's sort of a selected  
17 quotation --

18 Q. I think, Mr. Snelson, we would all be  
19 surprised if that were the case. I am sure we have all  
20 had our experience with that.

21 I would like now to turn, if I may, to  
22 one other issue.

23 [10:55 a.m.]

24 Before I move on, I just want to confirm,  
25 Mr. Watson touched on this point, but Ontario Hydro



1 supports the principle that those adversely affected  
2 should share in the benefits. I believe Mr. Watson  
3 referred you to tab 17, and tab 17 was page 4-6 out of  
4 the DSP. I just want to confirm that those adversely  
5 affected should share in the benefits. Is that Ontario  
6 Hydro's principle?

7 THE CHAIRMAN: I think that question was  
8 asked and answered in the affirmative, if I recall.

9 MR. TAYLOR: Thank you, Mr. Chairman. I  
10 will move on.

11 Q. I am going to refer to you tab 27,  
12 and at tab 27 you have the Interrogatory 6.33.16, from  
13 the Moosonee Development Area Board, and in question A,  
14 it indicates:

15 Provide Ontario Hydro's analysis of  
16 the feasibility and opportunities for  
17 different ownership and control options  
18 of hydraulic sites in the Moose River  
19 Basin, for example, joint ventures,  
20 co-operatives, partnerships, independent  
21 power producer development, et cetera, to  
22 enhance local resident or community  
23 involvement.

24 Would you agree with me that the response  
25 is that no such analysis has been performed?

1 MR. SNELSON: A. That is the response.

2 Q. Thank you.

3 I would like to move on now and in  
4 reference to an interrogatory that was filed, Ontario  
5 Hydro referred to papers that were written by Katherine  
6 Davies under contract to Ontario Hydro.

7 Now, Mr. Chairman, at tabs 28 and 29, tab  
8 28 is a paper entitled "Assessing Cumulative  
9 Environmental Affects: An Introduction," prepared for  
10 Ontario Hydro Workshop on the Moose River Basin Plan  
11 Assessment Workshop in Timmins, February 6, 1991,  
12 Katherine Davies, and Tab 29 is entitled "Assessing  
13 Cumulative Environmental Affects: Further  
14 Information," again, prepared for Ontario Hydro  
15 Workshop on the Moose River Basin Plan Assessment  
16 Workshop in Timmins February 6, 1991, by the same  
17 author.

18 To the best of my knowledge, Mr.  
19 Chairman, I don't believe that these have ever been  
20 formally filed as an exhibit, although we certainly  
21 made reference to them in our motion back in March 1991  
22 and I believe form part of the motion record at that  
23 time.

24 But turning to tab 28, I would like to  
25 highlight two short passages from this paper by K.

1 Davies. In the first passage at page 3, under a  
2 heading that starts off, "A Changing View of the  
3 Environment," the author in the second paragraph talks  
4 about, she says:

5 Over the last 15 years our  
6 understanding has improved and a new  
7 working model for thinking about the  
8 world around us has developed. This is  
9 being called the ecosystem approach.

10 And getting into the third paragraph the  
11 author says this:

12 This multidimensional ecosystem  
13 framework requires that investigations of  
14 both the potential environmental effects  
15 of human projects must move beyond  
16 looking at the effects of individual  
17 projects and individual "stressors" and  
18 effects. Clearly, many environmental  
19 problems, like Pisces' demise...

20 The reference, if I may interject, to  
21 Pisces' demise is a story that the author told at the  
22 outset of this paper.

23 ....do not have one cause but a  
24 configuration of contributing factors  
25 that together over time create disturbing

1 results. When a new strange or  
2 "stressor" is introduced into an  
3 ecosystem, all kind of affects have to be  
4 explored in various combinations, in a  
5 variety of time frames and through many  
6 perspectives. This kind of problem is  
7 now called "cumulative environmental  
8 effects" and can result from....

9 And then the author lists a number of  
10 items. The first dash is several identical projects,  
11 and after that she refers to factories on the Fluvia,  
12 which is from her story.

13 The third item is nearby or distant  
14 sources, and she references again the factory and the  
15 smelter from her story. And over on the fourth page,  
16 the fifth item, through synergistic effects where a  
17 chemical combination of one plus one suddenly equals  
18 three, and the reference there in brackets is when  
19 chemical X and chemical Y transformed into chemical Z.

20 Now, Mr. McCormick, I guess you are the  
21 witness who will be most familiar with this area, am I  
22 correct?

23 MR. MCCORMICK: A. That's correct.

24 Q. And you have of course read these  
25 paper by Ms. Davies?

1                   A. I have read the first one, I believe  
2 I have skimmed the second one. I can't be sure.

3                   Q. And you would confirm that in fact  
4 Ontario Hydro retained Ms. Davies to prepare these for  
5 the program that I mentioned; is that correct?

6                   A. We retained Kate Davies to undertake  
7 these studies to provide a basis for a discussion at  
8 our workshop that was arranged with government agencies  
9 and Aboriginal peoples, affected residents of the  
10 basin.

11                  Q. Thank you.

12                  And if I refer the Board to tab 30 --

13                  THE CHAIRMAN: Just a moment. I take it  
14 that passage is not evidence in this hearing.

15                  MR. TAYLOR: I beg your pardon?

16                  THE CHAIRMAN: The passage you have just  
17 read, to make clear my understanding, is not evidence  
18 at this hearing. If you have a question to ask the  
19 witness about the passage, but I think that has to be  
20 understood, as I have made clear to other cross-  
21 examiners and others at other times.

22                  MR. TAYLOR: Thank you, Mr. Chairman, I  
23 will be coming to that.

24                  Q. If I may move to tab 30, this is  
25 Interrogatory 6.33.9, Moosonee Development Area Board,



1 and I refer the Board to paragraph C, which is about  
2 4/5ths of the way down the page. The question there  
3 sets out the following.

4 Please confirm that every project in  
5 the Moose River Basin will have or  
6 contribute to some cumulative  
7 environmental effects and that it is  
8 better to assess cumulative biophysical  
9 and socio-economic effects as part of a  
10 River Basin goal orientated planning  
11 process rather than as part of a single  
12 project environmental assessment (see K.  
13 Davies assessing cumulative environmental  
14 effects - further information prepared  
15 for Ontario Hydro workshop on the Moose  
16 River Basin Assessment, February 6-7,  
17 '91, at pages 2-4.)

18 Would you agree with me, Mr. McCormick,  
19 that the answer that was received is shown on the next  
20 page, under item C, and would you agree with me that  
21 this response states:

22 Each project in the basin will result  
23 in some environmental effects. The  
24 extent to which project effects will be  
25 additive has not been determined.

1 Ontario Hydro has not yet drawn any  
2 conclusions regarding the benefits of  
3 cumulative effects assessment nor the  
4 process proposed by K Davies.

5 Is that correct?

6 MR. McCORMICK: A. Yes.

7 Q. Despite the fact that she was  
8 retained by Ontario Hydro?

9 MS. HARVIE: Well, Mr. Chairman, right in  
10 the foreword to the first paper there is a little  
11 qualifier that points out although Dr. Davies was  
12 retained by Ontario Hydro to prepare the materials, the  
13 opinions were those of the author and were not  
14 necessarily endorsed by Ontario Hydro. If I can find  
15 the quote, I will bring it to your attention.

16 MR. TAYLOR: That is fine, I have no  
17 difficulty with that, Mr. Chairman.

18 MS. QUINN: I have also experience. I  
19 was at the workshop and spoke to Dr. Davies, and  
20 discovered to my surprise that she had not spoken with  
21 anyone to do with the social environment when she  
22 prepared the first paper. So, while she somehow  
23 embraces it in her discussion, she hadn't done any  
24 research on that point. So she is aware that I was  
25 concerned about the fullness of her consideration at

1 that time. And so I share this --

2 MR. TAYLOR: Thank you very much for that  
3 additive comment.

4 Q. Mr. McCormick, wouldn't you agree  
5 with me that the conclusions regarding the benefits of  
6 cumulative impact assessments should be made prior to  
7 the submitting of the DSP for approval?

8 MR. MCCORMICK: A. No.

9 Q. And so, Mr. McCormick, you would  
10 disagree with the statements from Ms. Davies where she  
11 says - and this is back at tab 28... I'm sorry, I was  
12 at tab 29. Tab 28.

13 Mr. McCormick, would you disagree with  
14 the statement that Ms. Davies makes at page 4 there  
15 where she says:

16 In this dynamic ecosystem framework,  
17 every project, big or small, will have or  
18 contribute to some cumulative  
19 environmental effects. These should be  
20 assessed as part of the decision-making  
21 process. This kind of assessment is not  
22 an add-on to the traditional practice of  
23 environmental assessment but a whole new  
24 way of going about it. In fact, it's  
25 probably better to assess cumulative

1 environmental effects as part of the  
2 planning process because project-specific  
3 environmental assessments rarely take  
4 full account of the other projects in the  
5 area and the ways in which they affect  
6 the environment.

7 Is that correct?

8 A. I agree with the statement. I don't  
9 see any contradiction.

10 The exercise in which Ms. Davies produced  
11 this was very different from the DSP. I am sure she is  
12 well aware the DSP existed and what the relative goals  
13 of the two processes entail.

14 There are many reasons why we undertook  
15 this cumulative effects workshop, the primary ones  
16 being to do the whole process in co-operation with the  
17 peoples and the agencies that were affected. This is a  
18 multi-year exercise that would complement site-specific  
19 environmental assessments. The decision-making process  
20 is that element of it once you are in the basin and not  
21 how you get to the basin.

22 Q. In tab 30, paragraph C Ontario Hydro  
23 says:

24 The extent to which each project  
25 effect will be additive has not been



1                   determined.

2                   In this context, is the word "additive"  
3       synonymous with "cumulative"?

4                   A. I believe that was the intent, yes.

5                   Q. Would you agree with Ms. Davies where  
6       she says that a chemical combination of one plus one  
7       may suddenly equal three? Do you agree with that  
8       statement?

9                   A. The effects may be synergistic, they  
10      may be exergistic; in other words, one plus one may  
11      equal less than two.

12                  Q. Or three?

13                  A. I said both, yes.

14                  Q. Thank you.

15                  Therefore, would you agree with me that  
16      it is possible that the impact from a complex of  
17      hydraulic sites may be greater than their sum?

18                  A. It's conceivable, but I guess it goes  
19      right back to how one goes about planning those and  
20      what factors are taken into account.

21                  I think we are supportive of the  
22      cumulative affects approach, that was the basis of the  
23      plan assessment that was proposed for the basin.

24                  Q. We will deal with that issue surely.

25                  In fact, what you are saying is that



1 where Ontario Hydro looks at more than a single  
2 project, that in fact you will have no idea what the  
3 cumulative impacts will be, will you?

4 A. That's the objective of the  
5 undertaking. It's not where you begin, it's where you  
6 end.

7 Q. Well, you have already advised on  
8 Ontario Hydro's behalf, haven't you, that no studies  
9 have been completed regarding the overall impact of  
10 hydraulic development in the Moose River Basin; aren't  
11 I correct on that?

12 A. It's true because most of the  
13 projects are in the planning stage. We don't know yet  
14 what the actual projects are, what order they will be  
15 constructed, which ones will or will not be  
16 constructed. You have to go through a fairly extensive  
17 set of studies to make these decisions before you can  
18 come to any conclusions on cumulative effects.

19 Q. Well, I will refer to you tab 31,  
20 which is page 12 of hydraulic plan, and in that first  
21 full paragraph it says:

22 A river basin plan assessment to  
23 evaluate and monitor basin-wide as well  
24 as cumulative environmental social  
25 impacts will also be conducted for the

1 entire basin.

2 Is that correct? I am just asking you to  
3 confirm that that's what it says.

4 A. In hindsight, if I was writing this,  
5 I wouldn't have suggested that it was dealing with the  
6 entire basin.

7 Q. Would you agree with me, Mr.  
8 McCormick, that that's what it says?

9 A. I agree that that's what it says.

10 Q. Thank you.

11 And the last sentence of that paragraph,  
12 will you agree with me that it says:

13 The basin-wide assessment will proceed  
14 in parallel with individual project  
15 environmental assessments.

16 A. Yes. The intent was to undertake the  
17 first -- the plan assessment along with the first  
18 project assessment that involved a new facility, and  
19 that was the Abitibi Complex, there was three  
20 developments within that complex, two redevelopments,  
21 Abitibi Canyon, Otter Rapids, and a new development at  
22 Nine Mile.

23 Q. Now, if I can refer to tab 32, this  
24 contains the interrogatory and a response, and the  
25 interrogatory is 6.33.32 from the Moosonee Development

1 Area Board, and the response is, the Moose River Basin  
2 Hydro Development Plan Assessment Backgrounder, Ontario  
3 Hydro, February 1991.

4 Would you agree with me, Mr. McCormick,  
5 at page 3 of that document, and it proceeds in a  
6 question and answer format there, the first question  
7 is: What is the plan assessment approach and how will  
8 it evolve?

9 And would you agree with me that the last  
10 sentence of that paragraph says:

11 It should be stressed that the PA -  
12 and the PA refers to the plan assessment  
13 - is not a substitute for the individual  
14 EAs but should act as a supporting  
15 document for each new hydroelectric  
16 project EA submission.

17 Is that correct?

18 A. That's correct.

19 Q. And does this still accurately  
20 reflect the means by which Ontario Hydro intends to  
21 study and assess the cumulative effects of a  
22 development in a basin?

23 A. In general terms we are proposing  
24 this entire study to be done in co-operation with the  
25 peoples of the basin. This was put forth for

1 discussion purposes. I think it is subject to their  
2 input and it may well change to some extent. It's not  
3 a fait accompli, but it was a first thought on it in  
4 any case.

5 Q. So this is only a first thought.

6 A. That's my understanding.

7 Q. And, of course, we know that as the  
8 Chairman has pointed out, the Mattagami River extension  
9 EA has been filed sometime ago.

10 If I go back to tab 30 when we talk about  
11 this cumulative effects assessment, or the plan  
12 assessment as the Moose River Backgrounder talks about,  
13 in Interrogatory 6.33.9B, which is on the first page,  
14 our client asked Ontario Hydro to indicate if the  
15 Mattagami environmental assessment development would be  
16 delayed until the Moose River Basin plan assessment had  
17 been completed.

18 Now, in response to that question, the  
19 second page, shows the response and under item B it  
20 says:

21 Approval of the Mattagami extensions  
22 is anticipated in advance of the Moose  
23 River Basin plan assessment which is  
24 being prepared to support the  
25 environmental assessment of...

1 And then there is a kind of a blank for  
2 most of the line.

3 ...the Abitibi Complex. The effects of  
4 redevelopment extensions at the Mattagami  
5 Complex is not likely to be significant.

6 [11:15 a.m.]

7 Mr. McCormick, I don't know if you are  
8 the right person to ask this, but every time I looked  
9 at that interrogatory response I always wondered if  
10 there was something missing from that answer. Is there  
11 something missing from that?

12 A. I can't be 100 per cent sure, but I  
13 know that there was a fair bit of cutting and pasting  
14 that went on to get so many interrogatories out. It  
15 probably doesn't reflect a deletion so much as how  
16 someone assembled this page from a number of pages.

17 Q. So does the answer then stand on its  
18 own; I am not missing something? You don't have  
19 something that I don't have?

20 A. I don't have something that you don't  
21 have - in this respect.

22 Q. Thank you very much, Mr. McCormick.  
23 (Laughter)

24 So the answer to this, then, is that you  
25 anticipated that in advance.



1 Now, Mr. McCormick, can I take you back  
2 to tab 31? We touched on this and I want to come back.  
3 Tab 31 says:

4 A river basin plan assessment to  
5 evaluate and monitor basin-wide as well  
6 as cumulative and environmental and  
7 social impacts will also be conducted for  
8 the entire basin.

9 Is that correct? Is the statement correct?

10 A. I think you have asked me this  
11 question, and --

12 Q. Is the answer still yes?

13 THE CHAIRMAN: No, he said he would have  
14 written it differently if he were writing it.

15 MR. TAYLOR: Q. Let me suggest this to  
16 you, Mr. McCormick. Isn't it contradictory for this  
17 answer compared to page 12 of tab 31 out of the  
18 hydraulic plan? Don't these two documents state  
19 different things?

20 MR. MCCORMICK: A. Perhaps you could  
21 explain the contradiction in your eyes.

22 Q. Well, I think you touched on it, Mr.  
23 McCormick, and I think you touched on the fact that at  
24 page 12 of tab 31 it talks about the entire basin.

25 Isn't it a fact that that hasn't

1 happened, it won't happen, and yet there is a  
2 site-specific EA that's already been filed; isn't that  
3 correct?

4 A. That's correct. I think in an ideal  
5 world where you can begin all your planning from day  
6 one and there is no history and there are no external  
7 influences a plan assessment could well indeed have  
8 included the Mattagami extensions, but in fact it isn't  
9 an ideal world. We are in a situation where the  
10 contract negotiations --

11 Q. We are going to get to that.

12 A. If you would let me finish, please?  
13 -- where the contract negotiations with  
14 Spruce Falls, the only way the water rights that would  
15 permit the Mattagami extensions to go ahead, the only  
16 way those rights could be acquired was agreeing to  
17 certain dates for submission. Subsequent to that, the  
18 government directed us to submit the environmental  
19 assessment.

20 I think in our view, having done the  
21 environmental assessment, we concluded that the effects  
22 of that development were highly localized and there  
23 probably would not be a great deal of interaction with  
24 downstream projects, and there are other factors as  
25 well, but the fact is that events took place in such a

1 way that the Mattagami extensions had to go ahead of  
2 the rest of the sites within the basin.

3 Q. So it's not true that --

4 THE CHAIRMAN: I think we have covered  
5 enough of this, Mr. Taylor. I think this really has  
6 very little, if anything, to do with what we are here  
7 to decide, and I think Mr. McCormick has given the  
8 answer why there was, why things were done the way they  
9 were done.

10 MR. TAYLOR: Mr. Chairman, I note the  
11 hour. I don't know if this is an appropriate time to  
12 take the morning break.

13 THE CHAIRMAN: We take it at 11:30  
14 usually.

15 MR. TAYLOR: That's fine with me, Mr.  
16 Chairman. I am prepared to carry on.

17 Q. Ontario Hydro has acknowledged that  
18 it is prepared to do some sort of cumulative impact  
19 assessment on the basins.

20 I am, however, correct, am I not, that  
21 Hydro has not agreed to conduct such a cumulative  
22 assessment of all development in James Bay and Hudson  
23 Bay; isn't that correct?

24 MR. MCCORMICK: A. We have agreed to  
25 provide data that we may have in our possession that

1 would be beneficial to such an assessment.

2 I think I have indicated in previous  
3 testimony that the nature of this work is still very  
4 much in the talking stages. We have not received any  
5 information describing the intentions of the federal  
6 government in conducting such a study beyond some  
7 general indications of what the first step or two may  
8 entail.

9 Again, that is in cross-examination on  
10 the record from a few days ago.

11 Q. Mr. McCormick, I think you are a  
12 little in advance of where I am. I just would like  
13 confirmation that Ontario Hydro has not agreed to  
14 conduct a cumulative assessment of development, all the  
15 development in James Bay and Hudson Bay; isn't that  
16 correct.

17 A. We are not in a position to do it, a  
18 development that involves the activities of other  
19 utilities or agencies. We can only look at the effects  
20 of our own developments.

21 Q. You can only look at the effects of  
22 your own developments. I am satisfied with that  
23 answer. If we can move on.

24 In response to our client's Interrogatory  
25 6.33.58, which is shown at tab 33, it was requested



1 that Hydro provide: a description of the efforts which  
2 have been made by Ontario Hydro to co-operate with  
3 Hydro Quebec in assessing the combined cumulative  
4 environmental effects of each utility's respective  
5 plans for hydraulic development in the James Bay/Hudson  
6 Bay region.

7 And in response to that we were referred  
8 back to Interrogatory 6.33.9 and 6.2.183. If we go  
9 back to tab 30 I believe that they were attached there,  
10 at page 3.

11 This was an interrogatory from Energy  
12 Probe, and I believe the answer is -- I refer to the  
13 second paragraph, the second sentence of which says:

14 Unless there is a reasonable basis for  
15 consideration of cumulative effects of  
16 other hydroelectric developments Ontario  
17 Hydro will request that government review  
18 and approval processes proceed  
19 independent of other hydroelectric  
20 activities within the basin.

21 Is that correct in terms of the answer?  
22 Did I accurately state --

23 THE CHAIRMAN: Doesn't it have to include  
24 the first paragraph and the first part of the second  
25 paragraph as well?



1 MR. TAYLOR: We are coming to that too,  
2 Mr. Chairman.

3 MR. MCCORMICK: I may be wrong, but I  
4 think you just read the passage. And if you did,  
5 that's correct.

6 MR. TAYLOR: Q. Thank you. And the  
7 inference from this answer is that if someone satisfies  
8 Ontario Hydro that there is a reasonable basis for  
9 considering the cumulative impacts of other hydraulic  
10 development in the Hudson Bay basin and James Bay that  
11 Hydro agrees that its development should be subject to  
12 government review and approved processes; is that  
13 correct?

14 MR. MCCORMICK: A. Would you repeat that  
15 again, please?

16 Q. Well, let me take you back. The  
17 portion that I quoted commences with: Unless there is  
18 a reasonable basis for consideration of cumulative  
19 effects of other hydroelectric developments...

20 My question from this interrogatory  
21 response that Hydro provided is, that if someone  
22 satisfies Ontario Hydro that there is a reasonable  
23 basis for considering the cumulative impacts of other  
24 hydraulic development in the Hudson Bay/James Bay basin  
25 that Hydro agrees that its developments should be

1 subject to government review and approved processes;  
2 isn't that correct?

3 A. Our first priority is to assess the  
4 effects of our proposals and whether there indeed will  
5 be any effects on the James Bay and Hudson Bay.

6 Q. Mr. McCormick --

7 A. If we are convinced that there indeed  
8 would be unmitigable effects that may somehow be  
9 cumulative or interactive with other utilities I am  
10 sure Hydro will act in a responsible way.

11 Q. Mr. McCormick, I'm sorry. I don't  
12 mean to cut you off, but it doesn't say there that 'if  
13 Hydro is convinced'. Doesn't it say that if there is a  
14 reasonable basis for consideration that Hydro  
15 agrees...; isn't that what it says?

16 MS. HARVIE: No, it doesn't say that, Mr.  
17 Chairman.

18 MR. TAYLOR: Mr. Chairman, I would like  
19 to have the witness answer as opposed to the counsel.

20 MS. HARVIE: Well, please. If you are  
21 going to quote from one of our interrogatories would  
22 you be so kind as to quote it correctly, Mr. Taylor?

23 THE CHAIRMAN: Anyway, again, I don't  
24 know what this has got to do with what we have to  
25 decide. Whether there is a cumulative impact

1 assessment involving other jurisdictions is a matter  
2 that may or may not come up in the future. It's got  
3 nothing to do with this hearing at this moment.

4 MR. TAYLOR: Mr. Chairman...

5 Q. I would like to take you, if I may,  
6 then -- let me take you to tab 32.

7 Tab 32 is the backgrounder prepared by  
8 Ontario Hydro, and at page 5 of that backgrounder that  
9 Ontario Hydro prepared and produced there is a question  
10 at the middle of the page, and the question that's  
11 there says:

12 What are some of the environmental  
13 issues anticipated to be associated with  
14 the Moose River Basin plan?

15 And then the answer states:

16 As a result of initial contacts with  
17 government agencies, Aboriginal people  
18 and stakeholder groups in the Moose River  
19 Basin several potential issues and  
20 concerns associated with hydroelectric  
21 development in the Basin have been  
22 identified. These include but are not  
23 limited to the following:...

24 And, Mr. McCormick, would you agree with  
25 me that the third one that's identified on the lefthand

1 side of the page says: Hydro Quebec and Manitoba Hydro  
2 developments?

3 MR. MCCORMICK: A. Those are issues that  
4 were identified, yes.

5 Q. And, Mr. McCormick, I take you back  
6 to tab 7.

7 Tab 7 is page 3.5 where it talks about  
8 the criteria of societal considerations, and the  
9 reference there is to the fact that social  
10 acceptability of the plans will depend on the extent to  
11 the which Ontario Hydro has integrated changing social  
12 values into its plans; is that correct?

13 MS. QUINN: A. Yes, that's correct.

14 Q. And would you agree with me that on  
15 the third column it says:

16 Social acceptance is considered from  
17 a provincial, regional and local  
18 community perspective?

19 A. Yes, that's correct.

20 Q. And would you not then agree with me  
21 that based on this backgrounder that Ontario Hydro has  
22 reasonable grounds upon which to know that the local  
23 community is concerned about Quebec Hydro and Manitoba  
24 Hydro developments?

25 A. Yes, we are aware of that.



1 Q. And if that's the case, then I  
2 suggest to you, does not Ontario Hydro have a  
3 reasonable basis upon which to consider the cumulative  
4 effects of all development in the Hudson Bay and James  
5 Bay lowlands?

6 A. I suggest we couldn't begin to do  
7 that outside of our own province.

8 Q. Well, would you not agree with me  
9 that Ontario Hydro should be trying to assess the total  
10 impact of its developments in conjunction with others  
11 prior to seeking approval of its Demand/Supply Plan?

12 MR. MCCORMICK: A. Definitely not.

13 Again, this is not an ideal world where  
14 you can do many years of study at a highly  
15 site-specific level. We are getting into a lot of  
16 issues here as to what's relevant to the DSP and what's  
17 relevant to site-specific projects.

18 Q. Let me move along.

19 MS. QUINN: A. Maybe I can add some  
20 information to this, if I may.

21 Q. Mr. Chairman --

22 THE CHAIRMAN: Let Ms. Quinn answer.

23 MS. QUINN: At the workshop in Timmins -  
24 and I believe a representative of your law firm was  
25 there because I spoke with him about the Mattagami



1 social impact assessment - there was an invitation  
2 extended to all parties involved in the basin to  
3 participate in studies.

4 Ontario Hydro would contribute in a  
5 variety of ways and involve as many people as possible,  
6 and we have made the offer to do this in a co-planning  
7 sense, and, as you know, we have now recognized the  
8 limitation of proceeding with these studies most  
9 officially through our excluding criteria related to  
10 this particular hearing.

11 MR. TAYLOR: That's exactly the next  
12 topic I wish to touch on, Mr. Chairman, and I do see it  
13 is 11:30. Maybe I was somewhat early on my suggestion  
14 last time. I hope I am on time this time.

15 THE CHAIRMAN: No, you are on time this  
16 time. Do you have some rough idea of how long you  
17 think you may be?

18 MR. TAYLOR: I only have about, I think,  
19 three tabs left in my exhibit, so I don't expect I will  
20 be that long, and I am sure we will be able to finish  
21 before lunch.

22 THE CHAIRMAN: Thank you.

23 MS. PATTERSON: Maybe even in 10 minutes?

24 MR. TAYLOR: All depends on the answers,  
25 I guess.

1 THE REGISTRAR: This hearing will recess  
2 for fifteen minutes.

3 ---Recess at 11:30 a.m.

4 ---On resuming at 11:46 a.m.

5 THE REGISTRAR: Please come to order.  
6 This hearing is again in session. Please be seated.

7 THE CHAIRMAN: Mr. Taylor?

8 MR. TAYLOR: Thank you, Mr. Chairman.

9 Before we commence on the topic of  
10 co-planning, Mr. Chairman, I unfortunately omitted one  
11 reference to an interrogatory that has been filed. I  
12 turn attention of the Panel and the Board to tab 30,  
13 which is Interrogatory 6.33.9 from the Moosonee  
14 Development Area Board, and it's the question at the  
15 absolute bottom of the page. It is a little bit funny  
16 in that it actually carries over to the absolute top of  
17 the second page, and below that there is a list of dots  
18 before you get to the response.

19 Q. I would just ask to have the Ontario  
20 Hydro panel of witnesses confirm that the question that  
21 was put by the Moosonee Development Area Board was:

22 Please identify and summarize any  
23 studies, workshops or other  
24 investigations, past, present or  
25 anticipated in the future, dealing with

1 the cumulative effects of the proposed  
2 Hydro developments in... And then right  
3 at the top of the page, ....Ontario,  
4 Quebec, Manitoba on the Hudson/James Bay  
5 basins.

6 And the answer to this question E is  
7 found at the absolute bottom of that second page, E, it  
8 says:

9 Ontario Hydro has not participated in  
10 studies, workshops or other  
11 investigations dealing with the  
12 cumulative effects of proposed  
13 hydroelectric developments in Manitoba,  
14 Quebec and Ontario.

15 And then it carries on and makes  
16 reference, as I believe Mr. McCormick mentioned, to a  
17 willingness or preparedness to co-operate with  
18 government studies; is that correct?

19 MR. MCCORMICK: A. The statement in the  
20 interrogatory response continues to be true.

21 Q. Thank you.

22 Turning now to the question of  
23 co-planning.

24 Now, just to briefly restate, I am  
25 correct in that Ontario Hydro has pulled all proposed

1 hydroelectric development in the Moose River Basin  
2 other than the Mattagami River extensions pending an  
3 agreement with affected groups on appropriate  
4 co-planning process; is that correct?

5 MS. BASU ROY: A. That potential has  
6 been excluded from the attainable potential.

7 Q. Now, could I take you to tab 34, Ms.  
8 Basu Roy, I believe this is your evidence from Volume  
9 83, page 14673 at line 14. The quoted portion there  
10 is:

11 "The next overhead is page 35 of the  
12 Exhibit 362, and here is shown the  
13 seventh and final exclusion category;  
14 namely, suspended planning in the Moose  
15 River Basin.

16 Ontario Hydro has suspended planning  
17 from the Moose River Basin hydroelectric  
18 potential beyond the redevelopment  
19 extensions of the Mattagami Complex until  
20 a co-planning process has been developed  
21 and agreed to by affected Aboriginal  
22 groups."

23 Is that correct?

24 A. That's what it says.

25 Q. And thus we have a category called

1 suspended planning in the Moose River Basin?

2 A. That's correct.

3 Q. Now, at tab 36 -- no tab 35, I  
4 apologize. It's exhibit...

5 This is your chart, isn't it?

6 A. I believe that's page 35 of Exhibit  
7 362.

8 Q. Can I correct you and say that I  
9 believe it's page 36 of Exhibit 359?

10 THE CHAIRMAN: No, it's 362. I think she  
11 is half right and you are half right. (Laughter)

12 MR. TAYLOR: Q. And when we refer to the  
13 information at tab 35, if I can come at it that way, we  
14 are looking at a summary of hydroelectric potential in  
15 Ontario, and the undeveloped potential is listed under  
16 capacity as being 12,746?

17 MS. BASU ROY: A. That's correct.

18 Q. And then less, and there are a number  
19 of categories, and the last category is suspended  
20 planning, Moose River Basin, 1,511; is that correct?

21 A. That's correct.

22 Q. Now, in terms of the membership in  
23 the co-planning process, will you agree with me that it  
24 is not restricted to Aboriginal groups?

25 MS. QUINN: A. Yes, that's correct, and



1 I believe we spoke to that in Interrogatory 6.33.66.

2 Q. Thank you.

3 Now, in terms of the Moose River Basin  
4 projects, can I refer you to a table that we prepared  
5 that is shown at tab 36. At tab 36 we have the Moose  
6 River Basin projects, and across the top there are a  
7 number of sub headings, being the project, and listed  
8 under those are a number of projects, the river system,  
9 then new or development/extension and the co-planning  
10 process as being the sub headings; would you agree with  
11 me on that?

12 A. Maybe I can help.

13 When you label the column on the far  
14 right, co-planning process, do you mean to refer to our  
15 exclusion criterion which suggests that there will not  
16 be further work until a co-planning agreement has been  
17 arrived at but it does not include the Mattagami?

18 Q. Correct.

19 A. So as long as there is correspondence  
20 between your title and our exclusion criterion.

21 Q. Yes.

22 A. Okay.

23 Q. Starting at the left-hand side of the  
24 page, under the Abitibi Complex, would you agree with  
25 me that the Abitibi Canyon and the Otter Rapids, both

1 being on the Abitibi River and both being extensions,  
2 both are in the co-planning process and form part of  
3 the exclusion category?

4 MS. BASU ROY: A. Yes, that's correct.

5 Q. And would you agree with me that  
6 Cypress Falls, which is shown as the second last  
7 project on the left-hand side of the page, is on the  
8 Mattagami River, and it's a new project and it is in  
9 the co-planning process?

10 A. That's correct.

11 Q. And finally, the Mattagami Complex  
12 Kipling, Smoky Falls, Harmon, Little Long, all being  
13 the on the Mattagami, one being a redevelopment and the  
14 other three being extensions, and those are all out of  
15 the co-planning process; would you agree with me on  
16 that?

17 A. Yes.

18 Q. So, in terms of the co-planning  
19 process and in terms of the exclusionary category,  
20 would you agree with me that it is not dependent on  
21 which river system you are on?

22 A. That's correct.

23 Q. Would you agree with me it's not  
24 dependent on whether a site is new or an extension or a  
25 redevelopment?

1 A. That's correct.

2 Q. And, in fact, what you have is the  
3 Mattagami River extensions being no different in  
4 characteristic than the Abitibi Complex river system;  
5 is that not correct?

6 A. No, I wouldn't agree with that.

7 Q. You wouldn't agree with that.

8 Aside from the issue of government  
9 directive, would you agree with me that there are no  
10 different characteristics between those two systems?

11 A. I think the important difference to  
12 note here is that the Abitibi Complex would involve the  
13 development of a new site at the Nine Mile Rapids.

14 Q. I understand that and I appreciate  
15 that.

16 But with regard to the Abitibi Canyon and  
17 the Otter Rapids, would you agree with me that there is  
18 no difference in characteristic between those and the  
19 Mattagami Complex?

20 THE CHAIRMAN: I take it you are only  
21 talking about extensions, renovations and new, and  
22 names of rivers, is that what you mean?

23 MR. TAYLOR: That's correct, Mr.  
24 Chairman.

25 MS. BASU ROY: Sorry, is there a question

1 here right now?

2 MR. TAYLOR: Q. Yes, it was the same  
3 question I posed before.

4 MS. BASU ROY: A. I think what we have  
5 to recognize here is that for the Abitibi Complex, the  
6 three sites are being looked at as a complex, that the  
7 Abitibi Canyon and Otter Rapids extensions would be  
8 undertaken in conjunction with a new development at  
9 Nine Mile Rapids and they cannot be looked at in  
10 isolation.

11 Q. In contrast to that, the Mattagami  
12 Complex which involves three extensions and one  
13 redevelopment is being looked at in isolation; isn't  
14 that correct?

15 A. No, that's not correct.

16 Q. Well, would you agree with me that it  
17 is not in a co-planning process as part of the  
18 exclusionary category?

19 A. That's correct.

20 Q. Would you not agree with me in the  
21 fact that there is no environmental characteristic that  
22 would exclude the Mattagami River extensions from the  
23 co-planning process?

24 MS. QUINN: A. The co-planning process  
25 is not based on the study of impacts, environmental or



1 otherwise. It has to do with arriving at an agreement  
2 to do studies which may in time determine whether there  
3 are impacts. But the reference to co-planning has to  
4 do with the preparation of studies.

5 Q. I understand the answer but I am not  
6 sure it was the answer to the question that I asked.

7 The question that I asked was: Am I not  
8 correct that there is no environmental reason to  
9 exclude the Mattagami River extensions from the  
10 co-planning process?

11 THE CHAIRMAN: I don't know whether  
12 anyone can answer that question. I am not sure it's  
13 relevant to this hearing. It requires a site-specific  
14 type of study to be able to answer that question.

15 MR. TAYLOR: Mr. Chairman, the  
16 exclusionary category talks about --

17 THE CHAIRMAN: The exclusionary category  
18 is an arbitrary category announced by Ontario Hydro on  
19 September 25, or thereabouts, for whatever reason they  
20 saw fit, and they just excluded these particular sites  
21 and for a co-planning process.

22 MR. TAYLOR: Mr. Chairman, I am delighted  
23 with that response.

24 THE CHAIRMAN: It's not a response; it is  
25 just what happened.



1 MR. TAYLOR: I am happy to push on. We  
2 will be out very shortly.

3 Q. If I can turn to my final questions  
4 in cross-examination, and that refers to tab 37.

5 Tab 37, at the bottom of the page, and  
6 this is page 14 from the hydraulic plan, the hydraulic  
7 plan is noted there as originally will be providing  
8 about 8 per cent of the total system new supply energy  
9 requirement. If I can just stop there.

10 Now, Ontario Hydro has, since this was  
11 published, excluded a number of projects. Can anyone  
12 on the panel advise me, what percentage are we dealing  
13 with now?

14 MR. SNELSON: A. I think this is  
15 something that is better left to the plan update,  
16 because the amount that it is a percentage of is also  
17 changing.

18 Q. I understand that, Mr. Chairman, and  
19 in fact, at the break I spoke with Ms. Morrison because  
20 of my concerns with regard to what the reintegration of  
21 the plan would do for a part-time intervenor such like  
22 the Moosonee Development Area Board and Moosonee  
23 Chamber of Commerce, and how it would impact on our  
24 cross-examination, and I have been satisfied that  
25 depending on what happens with the reintegration plan,

1 that there may in fact be taken into account  
2 circumstances such like ourselves, and I am happy with  
3 regard to that process.

4 But if you could, just to this point in  
5 time, Mr. Snelson, since we don't know what the  
6 reintegration plan is going to say, based on what was  
7 put in evidence in chief, could you tell me what  
8 percentage we are dealing with now, generally? The one  
9 I was referring to was the total system new supply  
10 energy requirement.

11 MR. SNELSON: A. I am just scanning back  
12 over the hydraulic plan as it was at the time that we  
13 submitted the DSP and it appears as though at that time  
14 we were expecting about 6 terawatthours of energy from  
15 the new hydraulic sites within the 25-year period, and  
16 currently that is down to about 3-1/2 with the  
17 exclusion of the Moose River Basin sites on the  
18 co-planning agreement and suspended planning that we  
19 have discussed.

20 So, if you were to consider the future  
21 requirements to be the same, then that 8 per cent would  
22 be reduced in the ratio of about 3-1/2 to 6. But of  
23 course, as I have said, the basis will be changed in  
24 the plan update, and that's about as far as I can go at  
25 the moment.

1 Q. Just as a lay person, since you are  
2 down from 6 to 3-1/2, are we talking in the ballpark of  
3 about 4 per cent?

4 A. It would be in the 4 to 5 per cent  
5 range, I think.

6 MR. TAYLOR: Thank you.

7 Those are all my questions, Mr. Chairman  
8 at this time.

9 THE CHAIRMAN: I think I ought to mention  
10 that in this cross-examination and in others, we have  
11 allowed quite a bit of latitude with respect to the  
12 scope of the cross-examination to deal with  
13 site-specific considerations which really are not part  
14 of the issues that we have to decide here.

15 We have done that I think for a good  
16 reason, because the clients of the cross-examiners are  
17 very interested in perhaps a slightly broader picture,  
18 and we thought it better rather than wrangle about  
19 whether it was a site-specific question or illustrative  
20 of generic matters, that we would allow the questions  
21 to go in.

22 I think it ought to be made very clear  
23 that this does not mean that we will exercise the same  
24 kind of latitude when it comes to presenting evidence  
25 by intervenors. The time in which we have for

1 intervenor evidence is very much constrained, as  
2 parties know, and we are going to have to be much more  
3 vigilant in restricting the scope of intervenor  
4 evidence to the very issues which we must decide at  
5 this hearing.

6 So I thought that this should go on the  
7 record so that parties will be well aware of that when  
8 they are planning their interventions.

9 Mrs. Mackesy, you are next?

10 MR. TAYLOR: Mr. Chairman, if I may just  
11 say --

12 THE CHAIRMAN: I don't think there needs  
13 to be any comment on that.

14 MR. TAYLOR: I was just going to express  
15 our appreciation for your latitude and indulgence, but  
16 I'll take it back then. (Laughter).

17 THE CHAIRMAN: Thank you, Mr. Taylor.

18 Are you ready, Mrs. Mackesy?

19 MRS. MACKESY: Thank you.

20 CROSS-EXAMINATION BY MRS. MACKESY:

21 Q. My first questions have to do with  
22 co-planning and they are related to transmission so I  
23 may have refer to Panel 7.

24 Ms. Quinn, I would like to ask about your  
25 testimony on co-planning during Northwatch's



1 cross-examination, and I am referring to Volume 88,  
2 page 15601.

3 MS. QUINN: A. Yes, I have it.

4 Q. This is at lines 19 to 21 where it  
5 reads:

6 "We are now working on transmission  
7 studies that involve different parts of  
8 the province and co-planning agreements  
9 have been reached."

10 And my question is: Are these agreements  
11 in the form of written agreements?

12 A. Yes, they are.

13 Q. And would you be able to provide me  
14 with copies of those agreements?

15 MS. HARVIE: Well, Mr. Chairman, with  
16 respect, Mrs. Mackesy, as she herself pointed out, this  
17 is perhaps a matter that's more appropriately dealt  
18 with in Panel 7.

19 [12:08 p.m.]

20 MRS. MACKESY: I only raised it here, Mr.  
21 Chairman, because I didn't know whether it may be  
22 referred back since it had been brought up in this  
23 Panel.

24 THE CHAIRMAN: How many of these  
25 agreements -- are you aware of these agreements?



1 MS. QUINN: Yes. There are two at this  
2 point and a third one in negotiation still.

3 THE CHAIRMAN: Perhaps you can just tell  
4 Mrs. Mackesy where the agreements are, if you know?

5 MS. QUINN: Yes. The first agreement is  
6 with Wabun Tribal Council, which has its offices --

7 MRS. MACKESY: Q. I'm sorry, I didn't  
8 catch that.

9 MS. QUINN: A. The first agreement is  
10 with Wabun Tribal Council. It's W-a-b-u-n, and they  
11 are part of an organization, a political organization  
12 called NAN.

13 Q. Yes.

14 A. Their office is in Timmins, and they  
15 deal with matters within their Tribal Council area that  
16 are in the northeastern part of Ontario.

17 Then, our second agreement formally  
18 signed is with the Robinson Superior Treaty, First  
19 Nations, and they are in the middle part of Ontario, in  
20 the middle northern part of Ontario, and I believe they  
21 have their offices in Thunder Bay. I'm not sure of  
22 that, but I believe that's the case.

23 And we are in the process of discussing a  
24 similar agreement with Treaty #3, which is the  
25 northwestern part of Ontario.

1 Q. Would there be any difficulty in  
2 providing those...?

3 MS. HARVIE: Mr. Chairman, I know that  
4 Mrs. Mackesy has been having a number of discussions  
5 with Mrs. Formusa on the implications of Panel 7's  
6 evidence, and I would like to suggest that she pursue  
7 that request with Mrs. Formusa.

8 THE CHAIRMAN: Would that be all right?

9 MRS. MACKESY: I am content to do that,  
10 yes. Thank you.

11 Q. The next group of questions relates  
12 to pumped storage, and first I would like to recap some  
13 Panel 4 cross-examination. I'm not sure to whom I  
14 should direct these questions.

15 MR. SNELSON: A. Probably, in the  
16 absence of anybody else coming forward, it would be me.

17 Q. Fine. Thank you, Mr. Snelson.  
18 Pumped storage is spoken of as an energy storage  
19 technology. However, is it correct that it does not  
20 store electricity at the customer's point of use?

21 A. That is correct.

22 Q. In that case, transmission is  
23 required to carry the electricity produced by pumped  
24 storage from the generation site to large demand  
25 centres when the pumped storage site is not in those

1 large demand centres?

2 A. If the pumped storage site isn't in  
3 the large demand centre, that is correct.

4 Q. And it would also be correct that  
5 transmission is required to carry electricity from some  
6 other generating site to the pumped storage site to  
7 operate the pumping equipment if there is nothing to  
8 produce that energy at the pumped storage site?

9 A. That is correct. There are pumped  
10 storage schemes that are in load centres and close to  
11 generating stations, but in the hypothetical case that  
12 you have mentioned that is correct.

13 Q. How much electric energy is required  
14 to produce one kilowatthour of pumped storage hydro  
15 energy?

16 A. I did say that about 70 to 80 per  
17 cent of the energy that is stored is regenerated. So  
18 looking at it the other way around, then you would need  
19 somewhere in the region of 1.3 to 1.4 kilowatthours of  
20 energy to be produced to generate one kilowatthour of  
21 energy from a pumped storage scheme.

22 Q. Thank you.

23 A. It is the inverse of the .7 and .8.

24 Q. Thank you. My next question relates  
25 to remarks of yours, Mr. Snelson, in Volume 82 on page

1 14511, and this is at lines 8 to 13. And it reads:

2 "Hydroelectric potential is limited by  
3 natural factors; that is, rivers which  
4 have sufficient flow in the head. Pumped  
5 storage has no technical limit on the  
6 amount that can be installed. You can  
7 create reservoirs and pump water up and  
8 down. The potential is limited by what  
9 is useful to the system."

10 Now, I notice that in Exhibit 82 in the  
11 chapter on pumped storage there is quite a wide  
12 variance in the figures of potential for different  
13 pumped storage schemes, and I wonder how that relates  
14 to your statement that I have just read.

15 A. My statement was not limited by  
16 opportunities for above-ground pumped storage that are  
17 identified in the inventory report.

18 One of the sites that I believe is in the  
19 inventory report is the Jordan-Erie scheme where the  
20 upper and lower reservoirs are Lake Erie and Lake  
21 Ontario, respectively. In that particular case, the  
22 potential is theoretically very, very large.

23 In addition, there are pumped storage  
24 schemes where the lower reservoir is a cavern that is  
25 excavated in rock at some considerable depth, and



1 schemes have been considered for such developments at  
2 sites such as Lakeview or Pickering which are in our  
3 load centres and are close to generation, and the upper  
4 reservoir would be Lake Ontario and the reservoir is  
5 this cavern that is excavated in the rock perhaps 2,000  
6 feet below ground level.

7 The potential is as large as you care to  
8 build the hole, as you care to dig the hole. So that  
9 was the basis for my statement on page 14511.

10 Q. However, some of the sites listed in  
11 Exhibit 82 show a small potential of under 100  
12 megawatts. Would that be limited by the natural  
13 topography of the area?

14 A. Well, that tends to be limited by  
15 natural topography in the sense of either the upper  
16 reservoir or the lower reservoir is limited in some  
17 way.

18 Q. Now, you mentioned the underground  
19 caverns. This is what is referred to as underground  
20 pumped storage; is that correct?

21 A. That is correct.

22 Q. Have any underground pumped storage  
23 plants been built anywhere?

24 A. Not to my knowledge.

25 Q. So there are none in operation



1 anywhere that you know of?

2 A. No. I think the technology is quite  
3 straightforward, but I don't believe that any have  
4 actually been built that I know of.

5 Q. Thank you. And I am going on to my  
6 last group of questions now, and these again are for  
7 you, Mr. Snelson.

8 This has to do with the characterization  
9 of the Jordan-Erie and the Delphi Point pumped storage  
10 sites as being "very close" to where the greatest load  
11 demand occurs in Ontario.

12 This appears in Volume 83 at page 14739,  
13 and it's at lines 15 to 18. This was during the  
14 cross-examination by the government. I have a series  
15 of questions related to that.

16 Is Delphi Point as close to Toronto as  
17 Etobicoke is?

18 A. Certainly not.

19 Q. And is it as close to Toronto as  
20 Brampton is?

21 A. Clearly not. I believe that in  
22 cross-examination from the representative of the  
23 Farmers Association I did point out that there were  
24 potential transmission difficulties associated with the  
25 Delphi Point scheme.

1 Q. What I would like to get at is your  
2 characterization of "very close". Do you have any...

3 A. Can you just point me to where I made  
4 that characterization? Because I would like to see the  
5 context.

6 Q. Yes. It is Volume 83, page 14739,  
7 and it is at lines 15 to 18, and the term "very close"  
8 is line 17.

9 A. The reference to "very close" comes  
10 in Mr. Moran's question and is qualified as in southern  
11 Ontario, and so my answer "yes" was with respect to  
12 close to load centres in southern Ontario as compared  
13 to hydraulic generation sites that might be in northern  
14 Ontario. That was the context in which I was answering  
15 "yes" to "very close".

16 Q. So you were using this in a relative  
17 sense?

18 A. Yes.

19 Q. Are you aware that a person living as  
20 far from Toronto as Delphi Point is might not consider  
21 himself living close to stuff a load centre as Toronto?

22 A. Certainly.

23 MRS. MACKESY: I think those are all my  
24 questions, Mr. Chairman. Thank you.

25 THE CHAIRMAN: Thank you, Mrs. Mackesy.

1 Do you have any questions? Questions?

2 Thank you very much.

3 MR. NUNN: CUPE 1000 is next, but I think  
4 they are not coming until this afternoon.

5 THE CHAIRMAN: Well, I know this is  
6 getting very slack, but we will break now and return at  
7 2:30.

8 THE REGISTRAR: Please come to order.  
9 The hearing will adjourn until 2:30.

10 ---Lunch recess at 12:19 p.m.

11 ---On resuming at 2:37 p.m.

12 THE REGISTRAR: Please come to order.  
13 This hearing is now in session. Be seated, please.

14 THE CHAIRMAN: Mr. Goudge?

15 MR. GOUDGE: Mr. Chairman? I take it I  
16 can commence, sir? I am grateful for the  
17 accommodation--

18 THE CHAIRMAN: Yes, you certainly can  
19 commence.

20 MR. GOUDGE: --on the time front, and I  
21 don't have a great deal to cover with you, panelists,  
22 but let me begin if I can. I'm not quite sure to whom  
23 to direct the questions, but I will guess and feel  
24 free, if I guess wrong, to correct me.

25

1 CROSS-EXAMINATION BY MR. GOUDGE:

2 Q. The first area I want to deal with  
3 the panel is the area of the rehabilitation plans that  
4 you have in play for your existing hydroelectric  
5 projects, and I take it from what's been said here that  
6 that is an important element in Hydro's future planning  
7 exercise and future generation program; fair enough?

8 Mr. Snelson, perhaps I can direct that to  
9 you?

10 MR. SNELSON: A. Yes, that is an  
11 important element.

12 Q. And you have spoken to four different  
13 kinds of programs which are underway now; is that  
14 right?

15 MR. FLOOK: A. That's correct.

16 Q. And they are necessary because of  
17 Hydro's long history with hydro generation. The  
18 facilities on which the history is based go back some  
19 period of time? They're old?

20 A. Yes. They're old, and they need some  
21 work done on them.

22 Q. The fact that they are old I take it  
23 speaks to, looked at another way, the experience the  
24 corporation has with this kind of generation facility?  
25 You have got a lot of experience with hydroelectric



1 generation?

2 A. That is correct.

3 Q. And it is obvious, and I am sure it's  
4 on the record many times, but you really began as a  
5 hydroelectric facility? That's the origination of the  
6 generation source?

7 MR. SNELSON: A. Yes, that's correct.

8 Q. Now, I take it a corollary of that is  
9 the history you have had with it and the constant  
10 working with this kind of generation has resulted in  
11 the development of a very substantial bank of expertise  
12 in-house in how you do hydroelectric generation and how  
13 you maintain hydroelectric equipment; is that fair?

14 MR. FLOOK: A. I can only discuss it  
15 generally, but insofar as the maintenance and  
16 operation, yes, there is a considerable bank.

17 Of course, looking at new sites, Ontario  
18 Hydro hasn't done any new sites for a while, and  
19 perhaps in that area we don't have the full bank.

20 Q. Let me get to the new sites in a  
21 moment, Mr. Flook. I am simply talking now about  
22 maintenance or rehabilitation, if you like.  
23 Rehabilitation I take to be major overhaul as opposed  
24 to on-going maintenance. I am sort of generally right  
25 about that, aren't I?



1 A. That's correct.

2 Q. I simply want to make the point with  
3 you that Ontario Hydro at least on a relative scale in  
4 this province would have a much bigger bank of  
5 expertise in-house in how you maintain and engage in  
6 major rehabilitation of hydroelectric facilities than  
7 anyone else in the province?

8 A. I would say so.

9 Q. The point I am getting at is this,  
10 that if this rehabilitation program is to be done with  
11 maximum efficiency and maximum effect in terms of its  
12 success, isn't it so that it would most likely be  
13 carried out by your own people as opposed to those  
14 outside Ontario Hydro, outside contractors, who have  
15 less experience?

16 A. I wouldn't draw that conclusion  
17 completely. In general, yes.

18 Q. Yes. Obviously around the edges  
19 that's not going to be so, but I simply want to  
20 underline, and you can understand why, that the  
21 resource bank you have in-house to conduct this makes  
22 the success of your rehabilitation program most likely  
23 if it is done largely in-house?

24 A. I believe so.

25 Q. Now, let me move to a second area,

1 and you have touched on it, Mr. Flook, and that's  
2 moving away from the rehabilitation to the new  
3 generation.

4 Just to put it in some perspective, I  
5 understand that generally speaking while the numbers  
6 may have been amended as we have gone through the  
7 evidence with this Panel there are roughly speaking, if  
8 I can get the totals right, about 68 stations engaged  
9 in hydroelectric generation with 265 units?

10 I don't ask you to buy into the numbers  
11 precisely because they may have changed, but that's my  
12 understanding generally.

13 A. Generally speaking, yes.

14 Q. And they range in size from  
15 relatively small units, if one looks even at the peak  
16 megawatt capacity?

17 A. Yes.

18 Q. At the low end you have units that  
19 are well down around one or two megawatts?

20 A. Or even less.

21 Q. Or even less. So that Hydro has  
22 considerable experience running small hydroelectric  
23 units?

24 A. That is correct.

25 Q. Now, that being so, in your

1 evaluation of or your analysis of new facility  
2 generation capacity I take it you would have set no  
3 threshold based on megawatts below which Hydro would  
4 say, "We won't do it"? Mr. Snelson?

5 MR. SNELSON: A. There is no hard and  
6 fast threshold, but we have tended to eliminate from  
7 attainable potential sites of less than about 20  
8 megawatts.

9 Q. First, there is no absolute  
10 threshold, is there?

11 A. That's correct.

12 Q. Secondly, in using the 20 megawatt  
13 figure, can you give me in a nutshell the rationale for  
14 the use of that figure even though it's not a threshold  
15 in any sense, it's just perhaps a guideline?

16 A. The definition of small hydro which  
17 might be made available to private developers instead  
18 of Ontario Hydro has bounced around from time to time  
19 and has been generally in the range of two to 20  
20 megawatts.

21 Q. But I take it you would acknowledge  
22 that the selection of any number as a guideline, be it  
23 two megawatts or 20 megawatts, is a relatively  
24 arbitrary exercise--

25 A. That is correct.

1 Q. --and has nothing to do with the  
2 experience that the utility has had in running small  
3 units, because you have acknowledged you do have such  
4 experience?

5 A. That is correct.

6 Q. So if I said to you, do you know how  
7 to run small units in the two or below megawatt unit  
8 size, you would say, "Yes"?

9 A. Yes.

10 Q. And presumably if there were an  
11 existing new development that miraculously appeared  
12 overnight in the same size range you would say, We  
13 could run that just as well as we could run our  
14 existing little units. No magic to it, is there?

15 A. There is no magic to it. I'm not  
16 sure it would be just as well as our own existing units  
17 because there are characteristics of the river system  
18 that people who operate sort of learn and they gain  
19 experience on how to operate particular generating  
20 stations because of the different--

21 Q. Fair enough.

22 A. --characteristics.

23 Q. Absolutely. But that's a learning  
24 curve that either Hydro or a non-utility generator  
25 would have to get on, isn't it?

1 A. That is correct.

2 Q. Okay. The point I want to make with  
3 you is that when we come to analyse who is better to do  
4 new facility creation in the hydroelectric area your  
5 own experience is some indicator that you could very  
6 well do small utility generation of a hydroelectric  
7 kind; isn't that right?

8 A. We certainly could do small  
9 hydroelectric generation, and at least two of the sites  
10 that we are developing would fall into that less than  
11 20 megawatt range in Big Chute and Lake Gibson.

12 Q. Once they are developed obviously you  
13 have more expertise than anyone around now in Ontario  
14 in running them even though they're very small?

15 A. Yes. I am not so sure that other  
16 people can't acquire that expertise.

17 Q. I'm sure they could, but in terms of  
18 headstart you are a long way down the track, aren't  
19 you.

20 A. We have experience.

21 Q. 40 or 50 years down the track; isn't  
22 that right?

23 A. I'm sorry? How many years?

24 Q. 40 or 50 years, hydroelectric?

25 A. No, more like 85 years.



1 Q. 85 years. Fair enough. Okay.

2 Now, let me move to the third and last  
3 area I want to cover with you, and your last answer  
4 sort of leads into it. In looking at the exhibits that  
5 the panel presented to the Board in its evidence in  
6 chief, the very first slide is for me relatively  
7 indicative. It shows the relative contribution, if you  
8 like, of hydroelectric generation to this utility's  
9 output into the energy grid in Ontario, and I think  
10 it's fair to say that back in the 1950s hydroelectric  
11 was everything to the utility, wasn't it?

12 A. Up until the early 1950s we were  
13 effectively 100 per cent hydroelectric.

14 Q. What's happened since then is that  
15 there has been something of an evolution introducing  
16 first thermal generation as a second element in the  
17 equation?

18 A. Yes. Thermal generation using fossil  
19 fuels, yes.

20 Q. And then nuclear as the third major  
21 element in the equation?

22 A. Yes.

23 Q. So that now you have relativities  
24 amongst those three power sources that are vastly  
25 different from what they were in the 1950s?

1 A. That is correct.

2 Q. And the utility, I think, and I trust  
3 you would agree, has very successfully adapted to that  
4 relatively substantial, in order of magnitude terms,  
5 change; isn't that right?

6 A. Yes, I believe so.

7 Q. The point I want to make is sort of a  
8 broad historical point, Mr. Snelson, and I don't know  
9 whether you would agree with me, but doesn't that  
10 history of relatively dramatic change in the  
11 organization and its focus suggest to you that Hydro is  
12 not an organization without the capacity to engage in  
13 substantial change?

14 A. That's correct. And I think our  
15 movement in demand management at the moment is an  
16 indication of that.

17 Q. If you look at the exhibit that I  
18 referred you to it is indicative of just that point,  
19 Hydro's really substantial history at being able to  
20 evolve successfully through very substantial changes?

21 A. That's one interpretation of it, yes.

22 Q. And you would agree with it, wouldn't  
23 you?

24 A. I would agree with it.

25 Q. Doesn't that suggest that if one were

1 postulating whether or not Hydro itself as a utility  
2 can engage in small utility generation that change  
3 ought to be no obstacle, and to say we are used to  
4 doing things big and have difficulty learning to do  
5 things small flies in the face of the lesson history  
6 teaches us about the utility?

7 A. I think we have said that Ontario  
8 Hydro could organize to do small hydro.

9 Q. And history says to us, I trust you  
10 would agree, Hydro can successfully adapt?

11 A. Hydro has adapted to large change in  
12 the past.

13 Q. And could in the future?

14 A. And can certainly adapt to change in  
15 the future; whether this particular change or not is an  
16 open question.

17 Q. No, and historians differ about that  
18 sort of thing, but I want to get you to agree with me  
19 that history gives us a pretty optimistic sense about  
20 the utility's ability to change dramatically.

21 A. We have been able to change to a  
22 number of major changes in the past.

23 Q. And would you venture a prediction as  
24 to whether you would be able to in the future?

25 A. In certain cases, yes. I am not sure

1 in all cases.

2 MR. GOUDGE: Thank you. Those are all  
3 the questions I have.

4 THE CHAIRMAN: Thank you, Mr. Goudge.

5 Mr. Trivett, are you next?

6 MR. TRIVETT: Thank you.

7 [2:50 p.m.]

8 Mr. Chairman, we are going to start with  
9 Exhibit 362, at page 23. I believe everybody has it  
10 before you.

11 THE CHAIRMAN: Yes.

12 MR. TRIVETT: It does perhaps  
13 cross-reference to 322.27, which is simply a more  
14 detailed summarization of the same figure.

15 CROSS-EXAMINATION BY MR. TRIVETT:

16 Q. Mr. Snelson, I am proposing to start  
17 with Exhibit 362 at page 23. You also have the same  
18 facts on 322.27 in some greater detail. We may get  
19 into it in greater detail.

20 Who put that overhead in?

21 MR. SNELSON: A. I'm sorry?

22 Q. Who put that overhead in?

23 A. It's Ontario Hydro's evidence.

24 Q. Yes. But I don't know who you want  
25 the questions directed to.

1                   A. That particular overhead was part of  
2                   Ms. Basu Roy's evidence.

3                   Q. I suppose where that's where these  
4                   comments might be directed then.

5                   A. We can start there and see...

6                   THE CHAIRMAN: What has happened up to  
7                   now is the question is asked and whoever on the panel  
8                   think it most appropriate to answer does the answering.

9                   MR. TRIVETT: Yes. I just didn't want to  
10                  start the first one with total surprise, Mr. Chairman.

11                  Q. Referring to the theoretical  
12                  potential and the developed potential, what energy  
13                  potential in percentages of time, i.e., the 95 or 50  
14                  per cent or whatever estimated potential is, is the  
15                  megawatt capacity stated for the theoretical potential?

16                  MS. BASU ROY: A. Is your question  
17                  whether it's dependable, median or...

18                  Q. What I am asking is, what percentage  
19                  of time governs what you call the energy potential.

20                  I mean, when you decide that you have got  
21                  a theoretical potential, at what calculation do you  
22                  arrive at it? Is it on a 95 per cent of the time  
23                  estimate or 50 per cent of the time estimate?  
24                  Presumably since these are all aggregations they have  
25                  to be on the same potential.



1 MR. SNELSON: A. When you first asked

2 the question it was about capacity and now it appears  
3 to be about energy, and I think we have to be specific  
4 which one it is because the considerations are quite  
5 different.

6 Q. I said, what is the megawatt capacity  
7 stated in the theoretical potential?

8 A. On the capacity side, Mr. Trivett, it  
9 really doesn't matter very much about what percentage  
10 of time the capacity is stated at, because with water  
11 storage then the capacity, dependable capacity and the  
12 median capacity, dependable capacity is defined as 98  
13 per cent dependable, the median is defined as being  
14 exceeded 50 per cent of the time. And generally  
15 speaking, those are not very different numbers for  
16 capacity but they are quite different numbers for  
17 energy.

18 Q. Well, we will come to that in minute.

19 Do you use the same when you are making  
20 your developed potential summation?

21 A. The developed potential is derived  
22 from the listed capacities of Ontario Hydro's  
23 generating stations and we can tell you how that is  
24 defined to that degree of precision.

25 Q. But you cannot tell me out and out

1 that the theoretical potential which you have used with  
2 the summation 20,777 is arrived at exactly the same way  
3 as the developed potential at 7,256?

4 A. I believe Mr. Flook talked about the  
5 estimation of potential in undeveloped sites and that's  
6 a different process to the estimation of potential in  
7 developed sites, because in developed sites the  
8 generating plant exists, there is detailed flow  
9 records, there is detailed records of how the station  
10 is operated, and one can go to the sort of precision of  
11 defining the 98 per cent dependable and the 50 per cent  
12 dependable capacity and you have the data to do that.

13 The estimate process for undeveloped  
14 sites is a considerably less defined process that Mr.  
15 Flook addressed, I believe, in his direct evidence.

16 Q. Well then, could we turn to the  
17 report, 690 SP, that's 345, I think is your exhibit,  
18 and turn to section B, best efficiencies and MCR in  
19 table B1, that would be tab B, table B1 at page 10.

20 A. I have it.

21 Q. Do tables B1, 2, 3 and 4 aggregate  
22 the developed potential?

23 A. The numbers for the aggregate  
24 potential of Ontario Hydro's developed resources are  
25 taken from this report. I am just checking on exactly

1 which definition has been used.

2 THE CHAIRMAN: I'm sorry, Mr. Snelson  
3 what report are you looking at?

4 MR. SNELSON: This is the Exhibit 365.

5 THE CHAIRMAN: 365?

6 MR. SNELSON: Yes.

7 THE CHAIRMAN: All right, I have got 365.  
8 I think Mr. Trivett said 345 and that confused me.

9 MR. TRIVETT: Yes, I did, I'm sorry, Mr.  
10 Chairman.

11 MR. SNELSON: I understood 356 because I  
12 knew what he was referring to.

13 THE CHAIRMAN: What page are we at,  
14 please?

15 MR. TRIVETT: Tab B, second page, page  
16 10, B1.

17 THE CHAIRMAN: All right. Go ahead Mr.  
18 Trivett.

19 MR. TRIVETT: Q. I have asked if tables  
20 B1, 2, 3 and 4, aggregate the developed potential.

21 MR. SNELSON: A. What should happen is  
22 that the maximum continuous rating, which is the  
23 right-hand column of these tables, should aggregate to  
24 the Ontario Hydro developed potential of 7,256  
25 megawatts, with one exception and that is that this has

1       been increased by the expected increased output from  
2       our upgrade programs to our existing stations. So that  
3       is the -- there is an additional item in there. I  
4       think that's spelled out.

5                   THE CHAIRMAN: That's result of the SHARP  
6       program and other programs?

7                   MR. SNELSON: SHARP program and turbine  
8       upgrade programs.

9                   THE CHAIRMAN: And it won't all be done  
10      until 2000, is that right?

11                  MR. SNELSON: It's spread out over a  
12      period of time. Some of it may take longer than the  
13      year 2000.

14                  MS. BASU ROY: If you wanted to look at  
15      the details, detailed listing for each individual site,  
16      if you look at Exhibit 359, tables 1A and 1C will total  
17      the developed potential for Ontario Hydro.

18                  MR. TRIVETT: Q. Well, if these B1, 2, 3  
19      and 4 aggregate to developed potential, I think we can  
20      stay with that for my purposes, and the first thing I  
21      wanted to go on with on those tables is, in table B1  
22      under the heading Western Region Generation, which is  
23      your first heading, under Sir Adam Beck, it appears  
24      that the pumped generating is the part of the MCR  
25      number; is this the case?

1 MR. SNELSON: A. Yes.

2 Q. What is the site potential in terms  
3 of flow and head?

4 A. I'm sorry?

5 Q. What is the site potential in terms  
6 of flow and head?

7 A. I don't think I understand your  
8 question.

9 Q. Well, what is the head for the --  
10 there is a given head for Sir Adam Beck that's shown  
11 here.

12 A. Yes. Sorry, yes.

13 Q. And for pumped generation what is the  
14 site potential for flow and head?

15 MR. FLOOK: A. I think it's 80 feet of  
16 head, and the maximum continuous rating is 174  
17 megawatts.

18 Q. What is the flow?

19 A. Sorry, I don't have that information  
20 available right here.

21 Q. Could you let me have that? Could we  
22 have an undertaking for that?

23 Now, it's shown here --

24 THE CHAIRMAN: Just a minute.

25 MR. FLOOK: Yes, we will get that



1 information.

2 MR. TRIVETT: Thank you.

3 THE CHAIRMAN: Could we have an  
4 undertaking number, please.

5 THE REGISTRAR: 366.14.

6 ---UNDERTAKING NO. 366.14: Ontario Hydro undertakes to  
7 provide the flow rate of the Niagara  
8 pumped storage and to get the name plate  
rating.

9 MR. TRIVETT: Q. Now, it shows in this  
10 table that the MCR is 174, but in the Executive Summary  
11 at the front it shows it as 107. I take it it's the  
12 174 that has been taken and not the 107.

13 THE CHAIRMAN: Perhaps you could refer us  
14 to the part in the Executive Summary where it says  
15 that.

16 MR. TRIVETT: Table 1.

17 THE CHAIRMAN: Of the Executive Summary?

18 MR. TRIVETT: Of the Executive Summary,  
19 yes. Under the tab, Executive Summary, and it is  
20 called Dependable --

21 MR. SNELSON: That is a different  
22 definition, that is the dependable output.

23 MR. TRIVETT: Q. That's for a particular  
24 period of the year in the Executive Summary?

25 MR. SNELSON: A. It's the amount of

1 capacity that we can depend upon 98 per cent of the  
2 time or more during January.

3 Q. During January?

4 A. Yes. It doesn't have to be sustained  
5 for 98 per cent of the time, but we can call upon it 98  
6 per cent of the time in January.

7 Q. And the MCR, what percentage of the  
8 time is it?

9 A. MCR is maximum continuous rating and  
10 it is rating of the equipment rather than of the  
11 generating station.

12 Q. Is either of those the installed  
13 capacity?

14 A. There are a number of definitions of  
15 installed capacity and any one of these could be  
16 referred to as installed capacity. There is a third  
17 definition called name plate rating which is the name  
18 plate rating of the equipment.

19 Q. But you wouldn't be going by that?

20 A. No. For planning purposes, in terms  
21 of operating planning the system, we tend to go by the  
22 name numbers that are in the Executive Summary which is  
23 the median and dependable outputs that are listed  
24 there.

25 The maximum continuous rating was used, I

1 believe, in this summary on page 23 of Exhibit 362, and  
2 is also used in Exhibit 359, because it's a number that  
3 is available on a consistent basis over most of the  
4 generation, whereas this sort of detail might only be  
5 available for the larger generating stations.

6 Q. Mr. Hunter would like to know what  
7 the name plate rating is on that particular site?

8 A. This is the Niagara pumped storage?

9 Q. Yes.

10 A. I am afraid I don't know. Does  
11 anybody else? I don't think anybody here knows.

12 Q. Would you get that for me?

13 A. It won't be very different to the  
14 maximum continuous rating.

15 [3:06 p.m.]

16 Q. Could we have it just so we have the  
17 comparison with what we have here?

18 A. Yes, we can provide it.

19 Q. Thank you.

20 THE CHAIRMAN: Better put a number on  
21 that.

22 MS. HARVIE: May I suggest we just add it  
23 to the last one, Mr. Chairman, just to simplify things.

24 THE CHAIRMAN: Would that be  
25 satisfactory?

1 MR. TRIVETT: That's satisfactory.

2 Q. Then perhaps I could ask, was the  
3 original site capacity different before the pumped  
4 storage was built?

5 MR. SNELSON: A. We have been talking  
6 about the capacity of the pumped storage plant.  
7 Obviously, before it wasn't built there was no capacity  
8 at the pumped storage plant. I don't really understand  
9 the question.

10 Q. Well, was the site rated for less?

11 A. I'm sorry?

12 Q. That site would have had a  
13 theoretical potential?

14 A. Well, pumped storage isn't really  
15 subject to theoretical potential, as I said in my  
16 direct evidence.

17 Q. But it is subtracted from theoretical  
18 potential?

19 A. In this case it's added into the  
20 theoretical potential at the capacity that is presently  
21 there and then it is subtracted out again as part of  
22 the developed potential.

23 Q. So how much pumped storage is there  
24 that is included in any other sites?

25 A. In which other sites?

1 Q. Any other sites?

2 MR. FLOOK: A. There are no other pumped  
3 storage facilities in the Ontario Hydro system.

4 Q. So does that lead us to conclude that  
5 the theoretical potential could be increased if you did  
6 include such as you have increased it here?

7 MR. SNELSON: A. I think I tried to  
8 cover this in my direct evidence. The pumped storage  
9 is a very--

10 Q. I tried to understand it.

11 A. --different sort of thing to  
12 hydraulic generation even though they look very  
13 similar, and that the theoretical potential for pumped  
14 storage is undefined.

15 Q. Undefined. Can it not be computed  
16 for any site?

17 A. No.

18 Q. So normally you only -- how do you  
19 normally compute the theoretical potential, then?

20 A. Well, we compute normally theoretical  
21 potential for hydroelectric developments which generate  
22 energy.

23 For pumped storage, then that's a  
24 function of how big the reservoirs are. Sometimes you  
25 can choose to build the reservoirs bigger or smaller,



1 and the difference in height between the reservoirs,  
2 and how quickly you are going to fill them and empty  
3 them.

4 As far as we are concerned, the  
5 theoretical potential for having pumped storage  
6 generation in the province is very large, and the  
7 practical reasons why pumped storage is not a large  
8 part of our plans - in fact, new pumped storage is not  
9 part of our plans - is because of its limited  
10 usefulness to the system. So it's limited by how much  
11 is useful rather than the theoretical potential.

12 Q. Well, Mr. Snelson, if you would turn  
13 to your evidence in chief at line 14511, page 14511,  
14 line 15?

15 THE CHAIRMAN: Could you give me the  
16 volume, please, Mr. Trivett?

17 MR. TRIVETT: Yes, that's 82.

18 THE CHAIRMAN: Thank you.

19 MR. TRIVETT: Q. You make reference to  
20 the fact that pumped storage uses energy. Is that your  
21 position?

22 MR. SNELSON: A. Yes. I don't know  
23 whether you have got this, Mr. Trivett, but on the next  
24 line, line 6, there was a correction put into the  
25 transcript that it should read, "only 20 to 30 per cent

1 of the pumped energy is not regenerated". There was a  
2 not that was omitted from the --

3 Q. Is not regenerated?

4 A. Yes, there was a not omitted from the  
5 line.

6 Q. Thank you. I did not have that.  
7 Well, then, when your counsel was referring to this at  
8 line -- page 1413 at line 23, counsel characterized  
9 your statement on pumped storage--

10 THE CHAIRMAN: I'm sorry.

11 MR. TRIVETT: --as a net energy user.

12 THE CHAIRMAN: Could you give me the page  
13 again, please?

14 MR. TRIVETT: That's page 14513...at line  
15 3, was it?

16 THE CHAIRMAN: Thank you.

17 MR. TRIVETT: Line 3, yes.

18 Q. Now, you made no comment about that  
19 characterization. Would you characterize pumped  
20 storage as a net energy user?

21 MR. SNELSON: A. Certainly.

22 Q. Does the pump not store more than it  
23 uses?

24 A. The energy that is used to pump the  
25 water to the top of the hill is more than the energy

1 that's generated when the water falls back to the lower  
2 reservoir, so there is some energy that is stored and  
3 there is some energy that is lost, and so the energy  
4 that is lost is effectively used, it's no longer  
5 available.

6 Q. Well, Mr. Snelson, do not most of  
7 your power sites have times when they spill water?

8 A. No, relatively few.

9 Q. Relatively few?

10 A. Except for a few weeks a year in  
11 freshet.

12 Q. And do you have a study that shows  
13 that your generator with the spilled water that it  
14 would not have a net energy production effect?

15 A. Clearly, if you could generate from  
16 the spilled water you would generate more energy. The  
17 water flows for that proportion of time exceeds the  
18 capacity of those generating stations when operating 24  
19 hours a day.

20 Q. But do you not have an excess base  
21 load generation at the present time?

22 A. No, that's a comparatively infrequent  
23 circumstance.

24 Q. Our understanding was that in '85 you  
25 predicted an excess base load lasting through to 1993.

1 Is that different now?

2 A. I'm sorry, the predictions that were  
3 made in 1985?

4 Q. Yes.

5 A. We probably would have predicted a  
6 larger proportion of our energy coming from nuclear and  
7 hydroelectric sources than has actually been the fact,  
8 and we probably would have predicted that sometimes we  
9 might have had excess base load generation - that is,  
10 excess hydraulic and nuclear generation - but not in  
11 tremendously large portions of time, but significant.

12 MR. TRIVETT: Excuse me, Mr. Chairman.

13 Q. What is it that has changed that  
14 situation? I know we have now a great deal of nuclear,  
15 but are we going to shut down nuclear or spill water,  
16 or how do we come up with this balanced base load at  
17 this time?

18 MR. SNELSON: A. I believe that compared  
19 to 1985 predictions the load is higher than it was  
20 predicted to be. It certainly was up until the start  
21 of the current recession, and I believe that we are  
22 also generating less nuclear energy than we have  
23 predicted at that time.

24 Q. Well, then, continuing with table B1,  
25 if we can go back there...

1 A. Back in Exhibit 365?

2 Q. Yes, please. Moving down to "Ontario  
3 Power", still under the "Niagara River, Western Region"  
4 heading on page -- in Table 1.

5 A. Bl or Executive Summary, I'm sorry?

6 Q. Bl.

7 A. Bl.

8 Q. Let me get that. Had the wrong one  
9 open.

10 A. Yes, I have it.

11 Q. Now, it would appear that the MCR  
12 here shown as 108,000 kilowatt... Right there, yes.

13 What is the installed capacity at Ontario  
14 Power?

15 A. The maximum continuous rate is  
16 108,000 kilowatt or 108 megawatts.

17 Q. And this is part of the 7,256  
18 megawatt capacity we have been discussing?

19 A. Yes.

20 Q. Now, how many megawatthours does this  
21 plant normally produce per year?

22 A. I believe that's given in Table 1A of  
23 Exhibit 359.

24 Q. I tried to figure out what that  
25 meant. And what does it say in the Exhibit 365 at



1 table E2A? That's under tab "East System"? "East  
2 System"? It's the third page under the tab "East  
3 System". It shows there some figures for Ontario  
4 Power?

5 A. Yes.

6 Q. And it shows production in November  
7 and December? The average is zero all the way through.

8 THE CHAIRMAN: I'm sorry, I have lost  
9 you.

10 MR. TRIVETT: Sorry, Mr. Chairman. It's  
11 tab East -- Tab E, "East Resource System". That's the  
12 third page behind that tab.

13 THE CHAIRMAN: Thank you.

14 MR. TRIVETT: Q. And you have Ontario  
15 Power in the second column, and the average megawatts  
16 shown there is zero, all right? Explain it now.

17 MR. SNELSON: A. This is shown for 98  
18 per cent dependable water conditions. So this is low,  
19 when the river has got relatively little flow in it, so  
20 the flow that would be only less than this once in 50  
21 years.

22 So this is a very low flow in the river,  
23 and the available water in Niagara Falls should be used  
24 in the generating plant that can generate the most  
25 megawatthours from a given amount of water, and when

1 the water flows are low it is much more efficient to  
2 take the water to Queenston, Sir Adam Beck generating  
3 stations 1 and 2, where the head is about 50 per cent  
4 greater than the head immediately at the Falls than it  
5 is to use the water right at the Falls at the Ontario  
6 Power generating station.

7 So in low flow times there is a  
8 relatively little, if any, water available for use in  
9 the Ontario Power generating station.

10 Q. Is this forecast showing no use, no  
11 average energy, from that source the projection into  
12 the future?

13 A. That is the projection of the future  
14 with low water conditions.

15 If you turn to page E-3A, which is about  
16 two more pages further through this document, then you  
17 will see the conditions with medium water where there  
18 is quite significant generation at Ontario Power, both  
19 in terms of peak capacity and in terms of average  
20 megawatts in most months of the year.

21 [3:22 p.m.]

22 Q. This is where I have difficulty, you  
23 see, in understanding your theoretical potential, Mr.  
24 Snelson, because this seems to be a deduction at a  
25 different rate than the theoretical potential that was

1 put in. Am I wrong?

2 A. No. I think that the purpose of this  
3 table is to define the undeveloped potential which is  
4 the bottom line.

5 Q. Yes, I know.

6 A. So as long as we have been consistent  
7 in adding in the Ontario Hydro developed potential into  
8 the theoretical potential on the same basis as we have  
9 then subtracted it out as part of the developed  
10 potential, then the undeveloped potential on the bottom  
11 line will be a valid number.

12 Q. But is there a table at any place  
13 that really shows where things were added in at  
14 theoretical potential? What theoretical potential  
15 there is for each of these stations?

16 Have I missed that?

17 MS. BASU ROY: A. The details of that  
18 station by station would be obtained from Exhibit 359.  
19 All the stations which add up to the theoretical  
20 potential are itemized.

21 Q. While Mr. Hunter is looking that up,  
22 I had some other questions about Ontario Power, who  
23 owns that, Ontario Hydro?

24 MR. SNELSON: A. Yes.

25 Q. Why do we then take a minus from that

1 if we -- do we own Canadian Niagara also?

2 MR. WIGLE: A. No, we do not own  
3 Canadian Niagara.

4 Q. And Canadian Niagara doesn't only  
5 Ontario Power?

6 MR. FLOOK: A. No.

7 Q. Who owns the water rights?

8 MR. SNELSON: A. To Canadian Niagara? I  
9 believe it's an American company that owns the Canadian  
10 Niagara power generating station and they also have the  
11 water rights to it.

12 Q. Well then, if we could turn for a  
13 moment to A2-2?

14 A. Which document are we in, Mr.  
15 Trivett?

16 Q. We are still in the 365.

17 MS. PATTERSON: Tab A?

18 MR. TRIVETT: Tab A, page A2-2. Or is  
19 that in the appendix?

20 That's in the appendix, I am sorry. It's  
21 in the appendix, Mr. Chairman. The second page is A2  
22 and then on the reverse its A2-2, and the tab marked  
23 appendix in 365, appendix A.

24 THE CHAIRMAN: 2-2?

25 MR. TRIVETT: 2-2.

1 Q. There is a summary there of the  
2 relationship, particularly at the top of the first full  
3 paragraph on page A2-4, does that summarize the  
4 arrangement respecting Ontario Power?

5 THE CHAIRMAN: I'm sorry, does that  
6 summarize what? I am not quite sure as to the  
7 question. It's under the heading water diversions.

8 MR. TRIVETT: The page A2-4, Mr.  
9 Chairman, at the top of the are page: In order to  
10 maximize energy production from the Niagara area, I  
11 think is what Mr. Snelson was just referring to. Water  
12 is normally diverted to them in the following order.

13 THE CHAIRMAN: All right.

14 MR. SNELSON: Yes, that was the spirit of  
15 what I was referring to.

16 MR. TRIVETT: Q. And your answer to me  
17 then is, the output is included in both sides of the  
18 table?

19 MR. SNELSON: A. Which table are we now  
20 talking about?

21 Q. When we talking of going back to our  
22 basic question here and that is the theoretical as to  
23 developed.

24 A. So we are back to page 23 of Exhibit  
25 362.



1 Q. We are trying to conclude that the  
2 summary of B1, 2, 3 and 4, and I think you said, is  
3 substantially the theoretical -- is substantially the  
4 developed.

5 A. I'm sorry, I missed the question. My  
6 colleagues heard it but I missed it.

7 Q. My understanding is that you have  
8 said that the summation of B1, 2, 3 and 4, is your  
9 developed potential in Ontario Hydro, the 7,256.

10 A. Plus the expected amount of  
11 additional capacity from SHARP and the turbine upgrade  
12 program.

13 Q. Correct.

14 A. Yes.

15 Q. Now, am I now to understand that the  
16 figures which are put into the theoretical potential  
17 are put in at the same values as they are deducted in  
18 the developed potential?

19 A. Yes, that's correct.

20 Q. And that that is to be found in  
21 Exhibit 359?

22 A. Yes.

23 Q. That table does not include the  
24 pumped generation, as far as we can see, Mr. Snelson  
25 page 29 of Exhibit 359.

1 A. We are just checking the numbers.

2 But as we have said, seeing as it's both put in and  
3 taken out on the same basis, then the bottom line in  
4 the table will not depend upon this.

5 Q. It seemed to us that was taken out  
6 and not put in, that's why we are asking the question.

7 A. If you refer to page 30 of Exhibit  
8 359, which shows the way in which this is put together  
9 for both the technical potential and the developed  
10 potential, then there is a line SAB No. 3.

11 Q. Yes.

12 A. And the far right -- well, the next  
13 to far right column, which is capacity in megawatts,  
14 updated information, shows 174 megawatts.

15 Q. That's it.

16 A. Which is the same as in table B1 of  
17 Exhibit 365 where the pumping generation station is  
18 listed as having a maximum continuous rating of 174  
19 megawatts.

20 Q. This plan is dealing also with Sir  
21 Adam Beck 3 and then --

22 A. I think we have confused people  
23 perhaps - and this a little misleading - that should  
24 have read the pumped storage generating station, PGS,  
25 rather than Sir Adam Beck No. 3.

1                   The Sir Adam Beck No. 3, the station that  
2 we are currently seeking approval to build is not part  
3 of the developed potential.

4                   Q. And it is not part of the adjustment  
5 that were referring to before for 2000?

6                   A. No, it's not part of the adjustment.  
7 It's one of the sites that is available to be developed  
8 to meet part of the attainable potential.

9                   Q. So there is no deduction for that in  
10 the theoretical potential?

11                  A. It's added into the theoretical  
12 potential but it is not part of the subtraction from  
13 the theoretical potential from the developed potential  
14 that's is owned by Ontario Hydro or by others.

15                  So, it becomes part of the undeveloped  
16 potential which is at the bottom of page 23 of Exhibit  
17 362.

18                  Q. Sir Adam Beck 3 comes out of the  
19 undeveloped potential?

20                  THE CHAIRMAN: I think, if I am  
21 understanding correctly, that SAB 3 is wrongly labelled  
22 in the exhibit. It should be the pumped storage  
23 generating station, whatever they call it.

24                  MR. SNELSON: PGS.

25                  THE CHAIRMAN: But SAB 3 is not included

1 in the developed potential, but is included in the  
2 theoretical potential.

3 MR. SNELSON: That is correct. And page  
4 30 of Exhibit 359 should have read PGS or pumped  
5 storage generating station, where it says Sir Adam Beck  
6 No. 3.

7 MR. TRIVETT: Thank you.

8 Q. Now, while we are dealing with the  
9 matter of the Ontario Power station, it refers at A2-4  
10 to --

11 THE CHAIRMAN: A2-4 where, please?

12 MR. TRIVETT: That's where we were, Mr.  
13 Chairman, in the appendices.

14 THE CHAIRMAN: 365?

15 MR. TRIVETT: Yes.

16 Q. It refers there to paying back  
17 amounts.

18 What I wonder is how is the payback  
19 referred to in that second full paragraph shown in the  
20 A2-4 explanatory reflected in the tables in B1, or is  
21 it?

22 THE CHAIRMAN: Are you now talking about  
23 the agreement with the New York Power Authority?

24 MR. TRIVETT: Yes.

25 Q. If there is a payback there, how does

1 that affect these production totals, because presumably  
2 that isn't available for use in Ontario.

3 MR. SNELSON: A. And exactly which  
4 payback is it you are referring to, Mr. Trivett?

5 Q. In the second full paragraph on page  
6 A2-4.

7 A. The one that starts, the memorandum  
8 of understanding?

9 Q. Yes. This, I take it, is part of  
10 this water rights ownership by Niagara which leads to  
11 this arrangement.

12 A. I don't believe this is the  
13 arrangement with Canadian Niagara Power. This is an  
14 arrangement with the New York Power Authority.

15 Q. New York Power. And that's part of a  
16 larger agreement not related to the ownership of water  
17 rights?

18 A. It is related to the ownership of  
19 water rights. I believe Mr. Wigle has talked about it  
20 in some previous discussion with another counsel.

21 Q. Yes, we read that.

22 A. If you want to explore it in detail,  
23 then Mr. Wigle would be the right person to talk about  
24 it.

25 Q. Well, I was merely trying to sort



1       which arrangement this was part of it. It just says an  
2       arrangement.

3               THE CHAIRMAN: The evidence to date is  
4       that there is an arrangement that's been made with New  
5       York Power, their facilities are used, and there is a  
6       transaction that occurs which is considerably mutually  
7       beneficial. I think Mr. Wigle described it the other  
8       day in the response to the questions from Energy Probe.

9               MR. SNELSON: I think if you look further  
10      down that page, Mr. Trivett, at the third paragraph,  
11      the fourth and third paragraph from the bottom, there  
12      are some descriptions of the agreements with Canadian  
13      Niagara Power.

14              MR. TRIVETT: Q. Then may I transfer my  
15      question. How is this reflected in these totals? I  
16      mean, theoretical potential, developed potential, and  
17      undeveloped potential, how does the obligation to  
18      deliver to others reflect in these totals? I have  
19      difficulty following that.

20              MR. SNELSON: A. These arrangements are  
21      generally arrangements whereby we can improve on the  
22      circumstances where each person who owns water rights  
23      uses the water in their own plant, so Canadian Niagara  
24      Power has access to a certain volume of water, Ontario  
25      Hydro has access to a certain volume of water, the

1 various U.S. facilities on their side of the river have  
2 rights to certain amounts of water. These agreements  
3 are agreements that allow us to move water between one  
4 entity and another so that more power can be generated  
5 from that water, and then the person who owns the water  
6 rights gets at least the amount of power credited to  
7 them that they could have generated by using the water  
8 themselves, and then there are some arrangements as to  
9 how the extra power that is generated is shared among  
10 the various participants.

11 Q. I understand that, but I have  
12 difficulty in understanding how you then reflect that  
13 in your theoretical potential and your developed  
14 potential.

15 A. They are both included in the same  
16 way as they are on tables in part B of Exhibit 365.  
17 And so seeing as they are put into the theoretical  
18 potential in one way and taken out as part of the  
19 Ontario Hydro developed potential in the same way, then  
20 any discrepancies from different definitions, if you  
21 like, as to how that might be put in, would not impact  
22 on the undeveloped potential bottom line.

23 Q. Well then, if I may move on to my  
24 next item in B1, Mr. Snelson, that's the DeCew Falls,  
25 the installed capacity there. What do you rate the

1 installed capacity at DeCew Falls?

2 A. You are talking about DeCew Falls?

3 Q. Yes, please.

4 A. I am not sure I heard the question.

5 Q. What is the installed capacity? What  
6 do you show as your installed capacity?

7 A. Well, page 29 of Exhibit 359 has 30  
8 for DeCew Falls No. 1 and 144 megawatts for DeCew Falls  
9 No. 2, which is the same as --

10 Q. As the MCR rating?

11 A. As the MCR rating in table B1.

12 Q. What is NF 23 on B1 then?

13 A. I'm sorry, the....

14 Q. The second DeCew Falls--

15 A. Yes?

16 Q. --shows NF 23, whereas in the table  
17 it's DeCew Falls No. 2? Is that the same?

18 A. I believe so. NF 23 is an operating  
19 designation.

20 Q. This is an operating definition?

21 A. Operating designation.

22 Q. It's not a different...

23 A. No. And it shows at 144 megawatts  
24 which corresponds to the 144,000 kilowatts that are  
25 shown in table B1.

1 Q. And this is part of the 7,256  
2 megawatt developed?

3 A. Yes.

4 Q. Looking at the column normal head, we  
5 see that 1 has a head of 266 and 2 has a head of 283.4.

6 Now, could you give me the long-term  
7 average production out of ND 1, No. 1?

8 A. Table E3-A, which is under tab E, of  
9 Exhibit 365, has the median, the median peak and energy  
10 output of the DeCew Falls, and I believe that would be  
11 the sum of the two generating of generating stations.

12  
13 [3:43 p.m.]

14 Q. So it shows there a peak of 164 as  
15 against the total of these two of 174?

16 A. Yes. That is the median peak output  
17 in our tables.

18 Q. Well, we will try and understand  
19 that. Does ND 1 run every year?

20 MR. WIGLE: A. Yes, it does.

21 Q. If we can move along then down to the  
22 next page to the figures for Otto Holden --

23 MS. HARVIE: Mr. Chairman, I fear we are  
24 going to go through this entire list. I am concerned.

25 THE CHAIRMAN: Well, perhaps you could

1 tell me, Mr. Trivett, what direction this is all  
2 leading to?

3 MR. TRIVETT: Well, I am trying to  
4 determine that the potential that is shown as being  
5 used is in fact what is used. Whenever there is a  
6 discrepancy, what would appear to be a discrepancy, one  
7 has to ask the question.

8 THE CHAIRMAN: I am not sure I follow  
9 what you mean by that. I don't follow what you mean.  
10 What is this line of cross-examination getting at?

11 MR. TRIVETT: Looking to what the bottom  
12 line really is, Mr. Chairman.

13 THE CHAIRMAN: But their evidence is that  
14 as far as their assessment of undeveloped potential it  
15 doesn't matter because if they're wrong they're wrong  
16 both with the theoretical potential and with the  
17 developed potential, so it doesn't matter in coming to  
18 the undeveloped potential, which is what we are  
19 really--

20 MR. TRIVETT: It matters --

21 THE CHAIRMAN: Wait a minute, Mr.  
22 Trivett.

23 MR. TRIVETT: Yes.

24 THE CHAIRMAN: --which is what we are  
25 really here to assess. So I am not sure where this is



1 all getting us.

2 MR. TRIVETT: What I am trying to cover  
3 is what the balance of the undeveloped in Ontario is  
4 because --

5 THE CHAIRMAN: That's my point.

6 If they have made some errors in these  
7 tables at least they have made them consistently; that  
8 is, they have included them both in the theoretical  
9 potential and the developed potential, because 359 is  
10 the document you should be working from, not 365.

11 And so what difference does make? The  
12 bottom line, the undeveloped potential will be the same  
13 in any event.

14 MR. TRIVETT: Well, we have just dealt  
15 with a discrepancy between 359 --

16 THE CHAIRMAN: I am not sure I picked  
17 that discrepancy up.

18 MR. TRIVETT: Pardon?

19 THE CHAIRMAN: I am not sure I picked  
20 that discrepancy up.

21 MR. TRIVETT: The figure we have just  
22 dealt with was a total of 164 and the figure, the MCR  
23 over here is 174.

24 THE CHAIRMAN: Is that a discrepancy, Mr.  
25 Snelson?

1 MR. SNELSON: No, I wouldn't consider  
2 that a discrepancy.

3 MR. TRIVETT: Q. It's a difference of 10  
4 megawatts, isn't it?

5 MR. SNELSON: A. Yes, but it's in  
6 different definitions of capacity, and you have to use  
7 the definition that is appropriate for the particular  
8 circumstance for which it is being used.

9 THE CHAIRMAN: Anyway, whether it's 164  
10 or 174 it doesn't matter because it's in both sides of  
11 the equation. Do you understand that?

12 MR. TRIVETT: Yes, I do. But then the  
13 first answer was not correct that the figures -- the  
14 total of B1, -2, -3 and -4 is the Ontario Hydro  
15 developed potential, which is what it adds up to.

16 THE CHAIRMAN: I'm not sure. We are  
17 working off page 23 of Exhibit 362, which is -- that is  
18 where we started from; is that right?

19 MR. TRIVETT: 365, Mr. Chairman.

20 THE CHAIRMAN: 362, page 23.

21 MR. TRIVETT: Yes, that's correct, for  
22 the summaries.

23 THE CHAIRMAN: That is where we started  
24 from.

25 Now we have a theoretical potential of

1 20,777 megawatts and we have less developed potential  
2 of 7,256 megawatts. Now, this discrepancy of 170 or  
3 160, whatever it is, will appear both on the  
4 theoretical potential and under the Ontario Hydro  
5 developed potential.

6 Is that right, Mr. Snelson?

7 MR. SNELSON: Yes, that's correct.

8 THE CHAIRMAN: So it doesn't matter  
9 whether there is 10 megawatt differences.

10 MR. TRIVETT: I am just trying to  
11 understand my client's point here, Mr. Chairman.

12 THE CHAIRMAN: Perhaps we should take the  
13 afternoon break and then we can come back with a fresh  
14 start, but I hope it won't be necessary to continue  
15 this if you don't think it's going to be useful, and if  
16 you do want to continue it you have got to explain, to  
17 me at least, why we should be pursuing it.

18 MR. TRIVETT: Certainly.

19 THE REGISTRAR: This hearing will take a  
20 15-minute recess.

21 ---Recess at 3:48 p.m.

22 ---On resuming at 4:06 p.m.

23 THE REGISTRAR: This hearing is again in  
24 session. Please be seated.

25 MS. HARVIE: Yes, Mr. Chairman. We have

1 prepared and are ready to file Undertaking 366.114 that  
2 was given earlier this afternoon in respect of the  
3 Niagara pump station.

4 THE CHAIRMAN: That's bit of a record,  
5 isn't it?

6 MS. HARVIE: It is. (Laughter)

7 MR. TRIVETT: I thank you for that  
8 promptness.

9 MS. HARVIE: You are welcome.

10 THE CHAIRMAN: Thank you.

11 Now, Mr. Trivett, if you wish to proceed  
12 with that line I would like to know why. If not, I  
13 would like to go on to something else.

14 MR. TRIVETT: Well, I have some material  
15 which I wanted to file as part of my argument for going  
16 on with that line, Mr. Chairman, and the photocopier  
17 broke down in the middle of producing it during the  
18 break, and Hydro is now equally promptly getting it  
19 photocopied for us. Without that in front of you I  
20 don't think I should try to present the argument.

21 Perhaps I could go on to some other  
22 questioning until it becomes available?

23 THE CHAIRMAN: That will be fine. That  
24 will be fine.

25 MR. TRIVETT: Q. So if we could just

1 leave...

2 If we could turn to page 14519 in Volume  
3 82 of the evidence in chief - 14519, line 13 - I have  
4 some questions about the storage dams referred to.

5 It says at line 13:

6 "In addition, Ontario Hydro has  
7 storage dams which store water for later  
8 use by downstream generating stations.

9 "Although there has never been a  
10 complete inventory of dams in Ontario, it  
11 is estimated that there are over 2,000  
12 dams in Ontario.

13 "Of these, Ontario Hydro owns and  
14 operates 272."

15 My first question is: How many dams are  
16 being used by your 66 generating stations?

17 MR. FLOOK: A. 272?

18 Q. The whole 272?

19 A. Maybe you could pose your question  
20 again?

21 Q. I said, how many dams are being used  
22 by the 66 generating stations of the 272 that are owned  
23 by Ontario Hydro?

24 A. The water from all 272 dams is used  
25 for generation at the generating stations.



1 Q. So your answer then is that if there  
2 isn't a generating plant in direct connection  
3 presumably the 66 can only be directly connected to 66  
4 dams? The others --

5 A. No, I wouldn't say that.

6 Q. No?

7 A. One generating site may have a number  
8 of dams at it, and in addition to that, there may be  
9 storage dams upstream that store water on behalf of  
10 that generating station for the water to be used later  
11 on in the year.

12 Q. Well, that's the number that I am  
13 looking for, is the upstream storage for the  
14 generators. As you say, there can be several dams, but  
15 the pond would be of the same level for the generating  
16 station?

17 A. No. There may be associated with a  
18 generating station, there may be a number of dams both  
19 on the main river and cutting off lowland areas, and  
20 those dams are then associated with that generating  
21 station. There may be one, there may be five of them.

22 Now, in those cases the water level then  
23 is the same as the water level at the generating  
24 station, but in the case of storage dams which may be  
25 upstream at some distance which store water to be used

1 later at that generating station, of course the  
2 elevation of the water there is much higher.

3 Q. Then can you give me how many of the  
4 66 stations are manned stations?

5 THE CHAIRMAN: By the way, there are 68,  
6 I think.

7 MR. TRIVETT: 68, is it?

8 THE CHAIRMAN: I don't know whether it  
9 makes any difference.

10 MR. TRIVETT: Excuse me.

11 MR. FLOOK: There is an interrogatory  
12 that answers that question. It will just take me a  
13 minute to find it.

14 THE CHAIRMAN: You want to know places  
15 where people work? Is that what you mean?

16 MR. TRIVETT: Yes, manned stations.

17 MR. SNELSON: I believe it's  
18 Interrogatory 6.14.36.

19 MR. TRIVETT: 6.14.36?

20 THE CHAIRMAN: Assuming that's not been  
21 mentioned before -- has it been mentioned before, does  
22 anyone know?

23 MR. SNELSON: Not to my knowledge.

24 THE REGISTRAR: I will just check my list  
25 here, Mr. Chairman. I cannot see it.

1 THE CHAIRMAN: Give it a new number,  
2 then.

3 THE REGISTRAR: It will be .146.

4 THE CHAIRMAN: Thank you.

5 ---EXHIBIT NO. 367.146: Interrogatory No. 6.14.36.

6 THE CHAIRMAN: Mr. Flook, do you have the  
7 figure?

8 MR. FLOOK: There are 57 generating  
9 stations which are unattended.

10 MR. TRIVETT: Q. Thank you. Of these  
11 storage dams can you tell me how many of them are  
12 operated manually?

13 MR. WIGLE: A. I cannot give you a  
14 precise number, but most of them are operated at the  
15 site. They're not operated remotely.

16 Q. Most operated at site?

17 A. Yes.

18 Q. Do you know the remote ones or is it  
19 easy to give us a summary of that?

20 A. I cannot recall right at the moment.

21 Q. Thank you. Do you have a figure  
22 broken out as to what the cost is of manning those  
23 manual sites for operating the dams?

24 A. No. Our accounting system is not set  
25 up that way, to have the total costs broken out just

1 for operating the dams.

2 MR. FLOOK: A. But I get a gist in your  
3 question that you assume that there are people there.

4 Q. No, no, no. I know they go out to  
5 them.

6 A. Fine. Thank you.

7 Q. Can we just move now to the 2,000  
8 other dams? I noticed from the exhibit which you  
9 presented, the maps, that there are approximately  
10 double the number of hydro stations in Ontario operated  
11 by others than there are operated by Ontario Hydro?  
12 Would that be--

13 A. That may be so.

14 Q. --a correct ballpark from the maps  
15 that you have presented? What else?

16 A. Dams are not always associated with  
17 hydroelectric generating stations. They may be there  
18 by Water Conservation Authorities or MNR.

19 Q. Precisely. That's what I wanted to  
20 ask you, whether you have an assessment of the other  
21 dams that are -- if you turn...

22 Maybe we should fill out the question  
23 here because I don't know the answer. If you look at  
24 the existing hydroelectric generation, Exhibit No. 363,  
25 I took it that all of those are generating sites, and

1 Exhibit 364 refers to existing stations, and that may  
2 be -- some of them dams and some of them...

3 THE CHAIRMAN: 364 is entitled "Potential  
4 New Hydroelectric Generation", and 363 is "Existing  
5 Hydroelectric Generation".

6 MR. TRIVETT: And if you read the legend,  
7 Mr. Chairman, the black square shows potential at  
8 existing stations or dams.

9 Q. So I presume that these are part of  
10 the 2,000 existing in Ontario; am I correct in that?

11 MR. FLOOK: A. I guess so. I don't  
12 really know dams outside of Ontario Hydro's purview.

13 THE CHAIRMAN: Perhaps someone should  
14 clarify that. I thought the potential at existing  
15 stations of dams meant upgrades or increases in  
16 potential rather than existing. But I didn't study it  
17 that carefully.

18 MR. FLOOK: It may be when it is in  
19 association with an Ontario Hydro facility, but there  
20 is also the potential at dams that have no generating  
21 facility also, and in this map, in trying to draw it,  
22 we have combined the two, both existing generating  
23 stations plus existing dams which may not have  
24 generating facilities at it.

25 THE CHAIRMAN: But just so I am clear,



1 363, which includes all the existing hydroelectric  
2 generation, it's not duplicated? That isn't duplicated  
3 on 364, is it?

4 MR. TRIVETT: I think perhaps it is. I  
5 don't know.

6 THE CHAIRMAN: It doesn't look like it  
7 off hand.

8 MR. FLOOK: Yes, it is.

9 THE CHAIRMAN: Well, look at Niagara, for  
10 example.

11 MR. FLOOK: My eyes aren't --

12 MS. BASU ROY: Underdeveloped station  
13 would be shown on both maps.

14 THE CHAIRMAN: Yes, on both maps?

15 MS. BASU ROY: Yes.

16 MR. SNELSON: Underdeveloped.

17 THE CHAIRMAN: Yes. Well, there would  
18 have to be some development to make it onto the  
19 existing map.

20 MR. FLOOK: That is correct.

21 THE CHAIRMAN: If there was potential for  
22 more development it would be on the second map.

23 MS. BASU ROY: That is correct.

24 THE CHAIRMAN: But if there is no more  
25 potential, if it is to its full potential it doesn't

1 appear on the second map?

2 MS. BASU ROY: That's correct.

3 MR. TRIVETT: Q. Would the same rating  
4 be used then on setting these sites as the 95 per cent  
5 or the 90 per cent potential, 98 per cent potential?  
6 Is that how you set these sites? Would they be judged  
7 only on being able to be used 98 per cent?

8 MR. SNELSON: A. I think that we have  
9 pointed out that the capabilities are estimates of  
10 maximum continuous rating, and they haven't been  
11 defined precisely as to what percentage of time  
12 applies.

13 [4:25 p.m.]

14 I think when you went over our existing  
15 stations you saw that what we have put in for existing  
16 stations was the maximum continuous rating; it wasn't a  
17 number that was drawn from some probabilistic  
18 definition of capacity.

19 Q. So there is no common factor between  
20 these sites?

21 A. Sorry, between which sites?

22 Q. All of the potential. I mean, your  
23 theoretical potential is arrived at by perhaps a  
24 different formula, a different location?

25 A. I think Mr. Flook testified as to how

1 the potential for undeveloped sites had been  
2 determined. It was based upon run off coefficients and  
3 if water flows are not available.

4 MR. FLOOK: A. Where a study has been  
5 done at a specific site then the value that came out of  
6 that study was used. Where it is just an inventory  
7 type of assessment, then the inventory method of  
8 evaluating that theoretical potential was used.

9 Q. Where the study had been conducted  
10 there was a value at a specific site?

11 A. Where there had been some sort of a  
12 study conducted and there was a value developed for  
13 that site, that number was used, and where there was  
14 just an inventory of potential sites that hadn't been  
15 looked at on a site-specific basis, then the  
16 theoretical analysis that Mr. Snelson just talked about  
17 was used.

18 Q. Can you tell us which you used, the  
19 95 or 50 per cent percentile for your specific value  
20 sites, ones where you conducted a study?

21 A. It varies.

22 Q. It varies.

23 MR. SNELSON: A. I think the point I  
24 have made, Mr. Trivett, is that for assessing potential  
25 of capacity, the difference between 98 per cent

1 dependable and 50 per cent dependable is quite small.

2 On the whole of the Ontario Hydro system,  
3 the difference between 98 per cent dependable and  
4 median is about 200 megawatts, and that's 200 megawatts  
5 on a total of over 6,000 megawatts of capacity.

6 Q. Thank you.

7 Well then, we have here a formula which  
8 my client has suggested is a standard rule of thumb.

9 You have it before you, do you?

10 MR. FLOOK: A. No, I'm sorry, I don't.

11 Q. It is our suggestion this a fairly  
12 standard engineering formula for calculating capacity.

13 Would you accept this as a rule of thumb  
14 for me that could be used usefully?

15 A. It's a formula. I won't comment on  
16 it.

17 I think if you are interested, if you  
18 look on page 12 of Exhibit 82, basically it's a similar  
19 formula and it's been converted down to directly coming  
20 out with capacity of the site.

21 Q. Does it come out with a different  
22 factor then the 0695?

23 A. The theory is the same.

24 Q. Pardon?

25 A. The theory is the same.

1 Q. What is the factor in that one? Is  
2 it substantially different from the 0695?

3 DR. CONNELL: It's page 7 in Exhibit 362  
4 which we have in front of us.

5 MR. FLOOK: Thank you, Dr. Connell.

6 One is metric and the other is imperial.

7 MR. TRIVETT: Q. My client's position is  
8 that ours has no basis when it comes to capacity.

9 Could we use the formula and apply it to  
10 the next one we are going to proceed to, Mr. Chairman,  
11 and see how it works out, and either we go no further  
12 or we do.

13 THE CHAIRMAN: Which one are we talking  
14 about?

15 MR. TRIVETT: Otto Holden is the next one  
16 we are going to do and this is the formula that Mr.  
17 Hunter wants to apply.

18 THE CHAIRMAN: All right. Are we going  
19 to Exhibit 359 then?

20 MR. TRIVETT: That's right, Mr. Chairman.

21 THE CHAIRMAN: I suppose this formula  
22 should be marked as an exhibit so people know what we  
23 are talking about.

24 THE REGISTRAR: That will be Exhibit 437,  
25 Mr. Chairman.



1 THE CHAIRMAN: Thank you.

2 ---EXHIBIT NO. 437: Site Capacity Calculation.

3 THE CHAIRMAN: We are going to Exhibit  
4 359 to find Otto Holden; is that correct?

5 MR. TRIVETT: That's correct. 365.

6 THE CHAIRMAN: I think they prefer to use  
7 359, if you don't mind using 359.

8 MR. TRIVETT: It is just that it doesn't  
9 give you your head, Mr. Chairman.

10 THE CHAIRMAN: All right.

11 MR. TRIVETT: I think we are all agreed  
12 that the right-hand should be the same.

13 Q. So, if we go to Otto Holden and we  
14 look at the figures there --

15 THE CHAIRMAN: Is that tab B?

16 MR. TRIVETT: Tab B, page 11, on the  
17 Ottawa River, Otto Holden. MCR rating 240,000  
18 kilowatts. And we have a head there of 24.4 feet.

19 MR. FLOOK: Metres.

20 MR. TRIVETT: Metres. So that would be  
21 about 80 feet.

22 THE CHAIRMAN: I don't think we can jump  
23 back and forth from metric to linear without getting  
24 into some serious difficulties.

25 MR. TRIVETT: Q. Mr. Hunter is

1 suggesting that if you have an efficiency to give to  
2 that then we can use the formula which you have in your  
3 exhibit and compare it with how the results --

4 MR. FLOOK: A. I'm sorry, I don't have  
5 an efficiency or a flow to use.

6 Q. You don't have a flow in CFS?

7 A. I don't see a flow here, no.

8 THE CHAIRMAN: I am not quite sure what  
9 this is directed towards. What are we trying to show  
10 here, Mr. Trivett?

11 MR. TRIVETT: Well, my client's  
12 calculation shows a different...

13 THE CHAIRMAN: What does it show for Otto  
14 Holden?

15 MR. TRIVETT: I will give it to you. He  
16 shows a theoretical potential of 111 megawatts, Mr.  
17 Chairman.

18 MR. FLOOK: That would work out about  
19 right. I see under table 3-A, under median flows,  
20 average megawatt, Otto Holden, as -- if you look  
21 through January to August, and on my fast eyeballing of  
22 an average, it looks like around 115, it talks about  
23 that. So going up to 188 is the height.

24 THE CHAIRMAN: We are talking about a  
25 difference of 115 and 111, that's not really

1 significant.

2 MR. TRIVETT: No, we wouldn't argue with  
3 that, Mr. Chairman.

4 Q. Now, what is installed there,  
5 however, is 240. That's your maximum continuous  
6 rating.

7 MR. FLOOK: A. That's what it says, yes.

8 Q. Well, taken the 115, that gives you a  
9 substantial differential and I don't understand.

10 A. Of course it doesn't operate 24 hours  
11 a day, 365 days of the year. At some parts of the year  
12 it is operating at less than that, at partial periods  
13 during the time of the day or it operates at less  
14 capacity. So your installed capacity is larger and at  
15 certain times of the year it may operate 24 hours a day  
16 but at other times it doesn't.

17 Q. But we thought that what we were  
18 doing with the formula was coming at the capacity  
19 rating and the capacity rating we thought was 115, and  
20 yet we show a maximum continuous rating of 240, and it  
21 would seem if one were to come up with a theoretical  
22 capacity for Ontario, it would be the sum of the  
23 theoretical ratings, regardless of what is installed.

24 MR. SNELSON: A. The decisions on how  
25 much to install take into account the peaking

1 considerations that I have discussed in my direct  
2 evidence. And the 240 megawatts is what is installed  
3 at Otto Holden and what is available most of the time  
4 to be used for peaking purposes if required.

5 Q. Well then, can we do the same thing  
6 with the undeveloped potential and increase that  
7 according to what peaking you might choose to install?

8 A. There are choices that have to be  
9 made during the definition phase of a project as  
10 exactly how many megawatts to install at a site.

11 Q. Well, by my client's calculation your  
12 original 7,456 shows a total for the Niagara at 1,874  
13 and for the Lower St. Lawrence as 895, so you have a  
14 total of that, 7,456, of 2,769 which is Niagara and the  
15 St. Lawrence. And if you take that 2,769 from the  
16 7,456 - 7,256, sorry, my error - you come out with a  
17 remaining theoretical of 4,487.

18 Now, we have here the figures which I  
19 think we should put in, Mr. Chairman, that have caused  
20 the difficulty in my client arriving at his  
21 calculations, that show the 1947 Ontario Hydro Water  
22 Power Sites revised in 1985, and this is an MNR  
23 production.

24 THE CHAIRMAN: Perhaps we should mark  
25 this document as well.

1 THE REGISTRAR: That will be No. 438.

2 ---EXHIBIT NO. 438: Ontario's Water Power Sites, MNR.

3 MR. TRIVETT: We are going through this  
4 document, Mr. Chairman, on the 95 percentile number,  
5 the theoretical potential applied in the same basis we  
6 have just done for the remaining, exclusive of Niagara  
7 and the St. Lawrence, gave a theoretical potential of  
8 779, and we have installed --

9 THE CHAIRMAN: You are way ahead of me.  
10 Where do you see this in this document you just  
11 produced?

12 MR. TRIVETT: You have to go station by  
13 station with the calculation.

14 THE CHAIRMAN: But is this somewhere  
15 summarized?

16 MR. TRIVETT: No, it is not, Mr.  
17 Chairman.

18 THE CHAIRMAN: Where did you get that  
19 figure?

20 MR. TRIVETT: That's our summary. I have  
21 a figure which we had worked out, Mr. Chairman, and we  
22 can photocopy it. It's not as clean as it might be,  
23 but it's there. These are the sites and these are the  
24 figures applied from that table.

25 THE CHAIRMAN: What is the figure you are



1 giving me, please?

2 MR. TRIVETT: 779.

3 THE CHAIRMAN: And 779 is what, please?

4 MR. TRIVETT: That is the theoretical  
5 potential of the remaining sites, of Hydro sites.

6 THE CHAIRMAN: In the whole province?

7 MR. TRIVETT: Yes. Exclusive of Niagara  
8 and the St. Lawrence.

9 THE CHAIRMAN: Exclusive of Niagara and  
10 the St. Lawrence.

11 MR. TRIVETT: In the theoretical 779 --

12 THE CHAIRMAN: Just a minute. And how is  
13 that calculated, please?

14 MR. TRIVETT: Just as we calculated the  
15 figures we have just gone through with using this  
16 formula, Mr. Chairman.

17 THE CHAIRMAN: But you got it off 438 in  
18 some fashion. Can you tell me how you did that?

19 MR. TRIVETT: The formula which we have  
20 given you, the standard formula, which is now Exhibit  
21 437, is what we have used. Head times flow times this  
22 factor of 0695, which seems to be an approximation with  
23 theirs within a reasonably --

24 THE CHAIRMAN: Where is theirs?

25 MR. TRIVETT: That's the formula....

1 THE CHAIRMAN: Theirs being Hydro or the  
2 Ministry of Natural Resources.

3 MR. TRIVETT: The Hydro. On the exhibit  
4 which Mr. Flook just referred to.

5 Q. What was that number, Mr. Flook?

6 MR. FLOOK: A. Of course I don't think  
7 there is any discussion that your way of calculating  
8 was anywhere near our way of calculating.

9 All I indicated was in the power  
10 resources when I take an average, an average megawatts,  
11 it comes out to your roughly average megawatts of a  
12 site at a specific flow.

13 MS. HARVIE: Mr. Chairman, if I may just  
14 interject at this point.

15 In my submission, if Mr. Trivett wishes  
16 to cross-examine these witnesses about the method they  
17 use to calculate capacity it's certainly appropriate  
18 that he do so. On the other hand, if he wants to lead  
19 evidence about Mr. Hunter's method, I would suggest  
20 that's appropriately done in Mr. Hunter's case to the  
21 extent it's relevant at all.

22 MR. TRIVETT: Well, I was prepared to put  
23 in and ask for an undertaking to give me their  
24 calculation, Mr. Chairman. I would be satisfied with  
25 that, because then we can certainly compare it with Mr.

1 Hunter's.

2 It is just as things stand, I don't have  
3 any calculation as to how they arrived at it, and in  
4 our calculation we find that we come up with a very  
5 different number.

6 THE CHAIRMAN: What do you say they come  
7 up with? What is their figure compared to 779? What  
8 do you say it is?

9 MR. TRIVETT: The total figure less the  
10 Niagara and the St. Lawrence gives you 4,487 of  
11 theoretical capacity --

12 THE CHAIRMAN: But you have come up with  
13 a figure of 779 you told me.

14 MR. TRIVETT: That's right. That's how  
15 we come with the theoretical capacity of those same  
16 stations.

17 THE CHAIRMAN: What is Hydro's comparable  
18 figure?

19 MR. TRIVETT: That's what I don't know.

20 THE CHAIRMAN: You don't know from the  
21 analysis you have got?

22 MR. TRIVETT: No, because I don't know  
23 how they arrived at.

24 Mr. Hunter's position is the 4,487 is  
25 installed capacity, not theoretical capacity. If they

1 wish to come up with a calculation of their theoretical  
2 capacity that will clear the matter.

3 MR. SNELSON: Is this with respect to  
4 existing stations, Mr. Trivett, or with respect to  
5 future --

6 MR. TRIVETT: Q. Yes, with respect to  
7 existing stations, which may be adjusted by the ones  
8 which you are proposing.

9 MR. SNELSON: A. The figures that are in  
10 Exhibit 365 are better than any theoretical estimate in  
11 that they are the actual estimates and measurements of  
12 the outputs of the generating stations that exist.

13 Q. Yes. But they may be the output  
14 based upon using peaking some of the time,  
15 run-of-the-river some of the time, sometime it's base  
16 load, and so on.

17 A. That's correct. That is based upon  
18 the way in which they are actually used.

19 [4:40 p.m.]

20 Q. But it's very hard to compare that  
21 with an undeveloped potential because you have no such  
22 figures.

23 A. We are not trying to compare it. We  
24 are trying to determine the undeveloped potential, and  
25 as long as the figure is added into the theoretical

1 potential and -- for the existing stations, as long as  
2 the same number is added into the theoretical potential  
3 as is then taken out for the Ontario Hydro developed  
4 potential, then the number of undeveloped potential,  
5 theoretical undeveloped potential at the bottom of the  
6 figure is unaffected by the calculation method of the  
7 Ontario Hydro developed resources.

8 Q. The undeveloped potential figure will  
9 be arrived at, as Mr. Flook has said, by different  
10 calculations for different sites. And we don't have  
11 that calculation.

12 A. My point is that the method of  
13 calculation of the capacity of the existing sites, as  
14 long as it is consistent between what goes into the  
15 theoretical potential and then that is consistent with  
16 what is subtracted out as being the developed  
17 potential, will not affect the estimate of the  
18 undeveloped potential.

19 Q. I would agree with you in that, but  
20 it doesn't leave you with any comparable undeveloped  
21 potential to stand against the developed on any given  
22 waters.

23 THE CHAIRMAN: Well, that's argument.  
24 That's not a question. That's argumentative, and I  
25 don't --



1 - MR. TRIVETT: That's really what we are--

2 THE CHAIRMAN: Just a minute, Mr.

3 Trivett.

4 MR. TRIVETT: --concerned with, Mr.

5 Chairman.

6 THE CHAIRMAN: It's argumentative, and  
7 frankly, I don't understand it.

8 MR. TRIVETT: Maybe I don't either.

9 THE CHAIRMAN: All right.

10 MR. TRIVETT: Q. The total theoretical  
11 potential in includes --

12 THE CHAIRMAN: Well, I think Ms. Harvie  
13 is --

14 MR. TRIVETT: Excuse me, Mr. Chairman.  
15 If I might just summarize it so perhaps you do  
16 understand it?

17 THE CHAIRMAN: All right.

18 MR. TRIVETT: Q. The total theoretical  
19 potential includes the developed sites on the basis of  
20 which you have articulated and is not affected because  
21 the in and the out is the same, but it also adds to it  
22 the undeveloped sites calculated on various bases, so  
23 that when you come down to deducting at the end you  
24 still have an undeveloped potential and you seem to  
25 have no standard way of knowing how that was arrived

1 at.

2 And it seems that if you want to go that  
3 way and you take the difference on our base calculation  
4 this might -- this undeveloped potential might be  
5 capable of having developed on it, using the same ratio  
6 of development as is presently used on the developed  
7 sites, of as much more as the developed potential is  
8 more than the calculation done on a standard basis,  
9 which we have used.

10 So it leaves you with -- the undeveloped  
11 potential is -- seems to be a figure which has no real  
12 meaning, Mr. Chairman.

13 THE CHAIRMAN: Well, I think Ms. Harvie  
14 is right in that if this is the position you want to  
15 put forward it is more appropriate to put forward when  
16 you put in your own evidence rather than - wait a  
17 minute, please - rather than try and propose it here.

18 What you are really here to do is  
19 question Hydro about their plan.

20 I do say, and I have got to say quite  
21 frankly, that if you intend to do this in your  
22 evidence-in-chief you had better make it a lot clearer  
23 and a lot better than it has been presented today  
24 because on the basis it has been presented today I  
25 don't think we would accept it or even want to hear

1 about it. So I just give you that warning in advance.

2 But if you would just now continue with  
3 your cross-examination.

4 MR. TRIVETT: I have the figures and the  
5 copies are available now of the calculation which we  
6 have done of the theoretical.

7 Now, the figures on this summary, Mr.  
8 Chairman, are taken from the exhibit which we have just  
9 filed as number...?

10 THE CHAIRMAN: 438.

11 MR. TRIVETT: 438.

12 THE CHAIRMAN: And I guess these figures  
13 should also be marked as an exhibit, Mr. Lucas. 439?

14 THE REGISTRAR: Number 439.

15 ---EXHIBIT NO. 439: Figures from Mr. Trivett.

16 MR. TRIVETT: And these are the figures  
17 which you see throughout this list of water power sites  
18 in Ontario but taken strictly for Hydro's developed  
19 sites, the 68 sites, showing the 95 per cent, the 50  
20 per cent, the installed, and showing what has been  
21 installed relative to the calculation results of 95 and  
22 50 per cent as an overage or underage of potential.

23 Q. Mr. Snelson, if you will look on the  
24 first page of the summation there are some figures  
25 added just after "Ontario Power" and before "Beck" of

1 the sum at 95 per cent, 50 per cent, and the actually  
2 installed, and you will see that between the 95 per  
3 cent and the 50 per cent there is rather a larger  
4 difference there than the 200 which you had suggested  
5 for the whole system.

6 MR. SNELSON: A. I haven't had a chance  
7 to examine these exhibits ahead of time, but I do  
8 know--

9 Q. I'm sorry about that.

10 A. --but I do notice that, for instance,  
11 for the first plant that is on Exhibit 439, which is  
12 Abitibi Canyon, the 95 per cent number is 79,034, and  
13 that corresponds to page 1 of Exhibit 438, where  
14 Abitibi Canyon is about the fifth plant down in the  
15 first list of sites, and it says 79,034 in the column  
16 headed "Estimated Energy Potential in Kilowatt  
17 Available 95 Per Cent of the Time".

18 And the point I would make is that that  
19 says "estimated energy potential", so this is a measure  
20 of energy, not of capacity. So it is totally  
21 inappropriate to compare that with an estimate of  
22 capacity. That is closer to the energy potential which  
23 we give in average megawatts. So this is the average  
24 of what it can produce over time, not the peak it can  
25 produce at the time of peak.

1                   And on the energy side, the difference  
2   between 95 per cent dependable and 50 per cent  
3   dependable is quite significant, and I would expect  
4   that.

5                   Q. Can you do the same comparison for  
6   Merrickville, then?

7                   A. Merrickville is a very small plant.  
8   I'm not sure whether it would -- I was just going to  
9   complete the comparison with Abitibi Canyon.

10                  If you go to Exhibit 365 -- and I don't  
11   know what this will show so we are exploring as we  
12   go...

13                  Q. Yes.

14                  A. I am in Section E of that report, and  
15   Abitibi Canyon on table E-2-C has a...

16                  And I believe that the column that we are  
17   looking at, of 95 per cent of the time in Exhibit 438,  
18   is fairly comparable to the column that is headed  
19   "Energy Average Megawatts of Abitibi Canyon", and the  
20   79,000 kilowatt would correspond to 79 megawatts.

21                  You can see that according to the month  
22   of the year the average megawatts varies from about 87  
23   in February, which looks like -- and 86 in December,  
24   which looks to be the lowest, to 158 in May, which is  
25   the highest, and that number is the one that will



1 correspond to the -- closest to the 95 per cent  
2 dependable number you have.

3 If you were to go on another two pages to  
4 table E-3-C you will find a similar table for medium  
5 water conditions, showing outputs ranging from about  
6 130 average megawatts up to about 294 average  
7 megawatts, which corresponds to the 141 number.

8 So the point I think in here is that in  
9 the title of Exhibit 430 -- from 438, then the  
10 important word there that should not be missed is the  
11 'estimated energy potential' in kilowatts; it is not  
12 the 'estimated peak capability'.

13 Q. Would it be right to say that for low  
14 flow periods it is the peak--

15 A. No.

16 Q. --if you have no storage? No?

17 A. Well, we have storage.

18 Q. You have storage on all of your  
19 undeveloped potential?

20 A. No. We have storage on most of our  
21 existing stations. Most of the undeveloped potential  
22 would likely have storage associated with it, but that  
23 would depend upon the way in which the scheme was  
24 developed.

25 MR. TRIVETT: Well, Mr. Chairman, it

1 still does not seem to answer my question, which is  
2 really that the undeveloped potential has no clear  
3 support as to how that is calculated, and it is  
4 nevertheless stated as being what remains in the  
5 province to be developed as hydraulic power.

6 My client is trying to wrestle with the  
7 problem of if you can develop the power in the same  
8 ratios as you have developed on the existing sites that  
9 the undeveloped potential can be a different figure  
10 than the one which is shown, depending on your  
11 assumptions as to whether you are putting peaking on a  
12 river, or whether you are putting run of river, or  
13 whether you are putting dams, and what height, and so  
14 on.

15 I don't see that anything has been put  
16 before us that characterizes the undeveloped potential  
17 in a way in which a person can discuss it or challenge  
18 it. That's the problem that we are facing, and  
19 therefore, when one comes with some other case there is  
20 no Hydro case to compare it with.

21 MS. HARVIE: Well, that is the purpose of  
22 interrogatories, Mr. Chairman, to clarify the  
23 proponent's evidence if it is unclear to intervenors,  
24 and Mr. Hunter has submitted interrogatories to this  
25 Panel, and, to my recollection, none were submitted on

1 this subject.

2 DR. CONNELL: Mr. Trivett, if you look at  
3 Exhibit 362, which in fact summarizes much of Hydro's  
4 evidence, you will find that in all the tables - I am  
5 looking, for example, at 23 that we looked at earlier,  
6 and 24 and 25, and so on - that in each case there is a  
7 figure given for the capacity, which is given in  
8 megawatts, and there is also an energy figure given.

9 These are aggregated admittedly, but I  
10 assume that they're aggregated from estimates of the  
11 average energy capability of the particular sites.

12 I presume that those who have made these  
13 estimates have gone through the kind of exercise you  
14 have gone through, but I don't think the Panel has been  
15 left in any doubt as to what the capacity figures  
16 represent here, that they are peaking capacity figures  
17 which are based on knowledge of the head and flow  
18 characteristics and these drainage systems on  
19 particular sites.

20 MR. TRIVETT: Well, there seems no doubt  
21 that the developed Ontario Hydro potential includes  
22 peaking, Mr. Chairman and Dr. Connell, but the  
23 undeveloped potential does not seem to include peaking  
24 or any given estimate of what peaking might be on those  
25 potential sites.

1 DR. CONNELL: But each site will have its  
2 own particular capacity factor. But if one site is  
3 deemed to have a capacity factor of, let us say, as low  
4 as five per cent, if it is represented as being 50  
5 megawatts our understanding would be that that 50  
6 megawatts would represent the peak power at that  
7 capacity factor.

8 THE CHAIRMAN: Mr. Flook, you wanted to  
9 say something?

10 MR. FLOOK: Just going to comment on  
11 Exhibit No. 82.

12 It starts off with calculations on page  
13 12, discussing the methodology, and it gets into a  
14 formula of power from the flow and the head and gets  
15 into efficiency.

16 Then when you continue on to page 14 it  
17 takes into account -- and this is where it shows that  
18 you are only applying this or developing this energy  
19 for a period of 5,000 to 7,000 hours out of the total  
20 8,760 hours in a year, and that's supplied in the form  
21 of energy. And when you work it out it gives you a  
22 capacity factor of about 60 to 70 per cent capacity  
23 factor for the sites.

24 MR. TRIVETT: Q. And on your developed  
25 site what percentage are you running at?



1 MR. FLOOK: A. The developed sites are  
2 what is installed.

3 Q. Yes. What are you running at there,  
4 56 per cent of the original capacity or --  
5 [5:00 p.m.]

6 A. Each one is individual and there has  
7 been many exhibits describing exact capacity factor for  
8 each site.

9 Q. But our summation of those seems to  
10 indicate, if you turn to figures on the summary sheet  
11 which Mr. Hunter has prepared, it would seem to show  
12 that in something which would have an energy capacity  
13 of 332, you have developed 2,494.

14 A. The last number you gave is the  
15 installed capacity.

16 Q. Yes.

17 A. The first number you gave is energy.  
18 And in this case it's average of the year, it's an  
19 easier way of saying as opposed to so many  
20 kilowatthours in the whole year, instead you reduce  
21 that by dividing it by the number of the hours in the  
22 year to an average.

23 So, the energy may be developed at a  
24 varying rate during the year, different amounts per  
25 unit of time during the year, then at the end you



1 average. And in many cases for ease, it just is used  
2 as an average capacity. But as Mr. Snelson pointed out  
3 in Exhibit 438, the MNR report in 1947, that's energy,  
4 that's an average energy factor; it's not capacity.

5 MR. TRIVETT: I have some questions  
6 relating to Abitibi Canyon that go on from this, Mr.  
7 Chairman, and I think perhaps it would be better if we  
8 started those first thing in the morning and then we  
9 will leave the subject.

10 THE CHAIRMAN: All right. We will  
11 adjourn then until ten o'clock tomorrow morning.

12 THE REGISTRAR: This hearing will adjourn  
13 until ten o'clock tomorrow morning.

14 ---Whereupon the hearing was adjourned at 5:02 p.m. to  
15 be resumed on Wednesday, December 18, 1991, at  
16 10:00 a.m.

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